

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 759.—Vol. XX.]

LONDON, SATURDAY, MARCH 9, 1850.

[PRICE 6D.]

VALUABLE STOCK OF MINE MACHINERY AND MATERIALS, in the parish of ST. NEOT, in the county of CORNWALL.

**MR. MURRAY will SELL, BY PUBLIC AUCTION,** on Monday and Tuesday, the 18th and 19th days of March, 1850, by One o'clock in the afternoon of each day precisely, at HOBBS HILL MINE, in the parish of ST. NEOT, in the county of CORNWALL, all the

### MINING MATERIALS THEREON:

Comprising an excellent WATER WHEEL, 46 feet diameter, 4 feet abreast, with cast-iron axle and sockets, cranks, &c., employed as a pumping engine; 1 excellent single-acting cast-iron drawing machine, attached to and worked by the aforesaid wheel, 1 excellent water wheel, 24 feet diameter, 3 ft. 6 in. abreast, with cast-iron axle and sockets, with 3 cranks and 2 cast-iron multiplying wheels, with 12 heads of stamps complete, and a small wood drawing machine attached thereto, and about 60 fathoms of 1-inch chains of the best quality iron; also, 1 water-wheel, 22 feet diameter, 3 ft. 6 in. abreast, with 2 cranks, and frame-work for 12 heads of stamps, and a variety of iron caps (this wheel is already taken abroad); about 40 fathoms of 7-inch pumps, in three drawing lifts, including 5 6-inch working pieces, 3 door pieces, and 2 windmills, with all requisite pitwork to match, a small capstan and 2 pairs of shears, with about 120 fathoms of 3/4-inch cast-iron rope, of the best quality (from Chubb), nearly new, about 65 fathoms of 4-inch flat wire-rope, nearly new, and about 75 fathoms of ditto, 2 white kibbles, 1 winze ditto, with windlass rope, 1 iron tram wagon, 1 wood ditto, smiths' bellows, anvil and vice, taps and plates, screw stock, and a variety of smiths' and miners' tools, carpenters' bench, miners' and carpenters' chests, knives and other materials necessary for tin dressing, a quantity of new and old wrought and cast-iron, brass, &c., scales and weights, a quantity of rope, grinding stone and frame, about 60 fathoms of large lamp-ropes, and a large quantity of first-rate timber, with a variety of miscellaneous property suitable for mining purposes.

The attention of mine agents, mechanics, farmers, and the public generally, is particularly invited to the above, as most of the materials are nearly new, of the best quality, and in excellent condition.

Refreshments will be on the Table at Twelve o'clock.

All persons having any demands on the above mine are requested immediately to send the particulars to the purchaser, Mr. R. Clogg.

**MONEY TO LEND**—the sum of £500, to be divided in small sums.—Apply to the auctioneer.

Dated Castle Villa, Liskeard, Auction and Mining Offices, March 1, 1850.

**SPARE MINING MATERIALS AND OLD WROUGHT AND CAST-IRON FOR SALE.**

**MR. W. PENBERTHY will SELL, BY PUBLIC AUCTION,** on Tuesday, the 19th inst., at Twelve o'clock at noon, at WHEAL VOR MINE, in the parish of BREAEG, CORNWALL, the following

### MINING MATERIALS—viz.:

- 1 80-inch PUMPING ENGINE, with or without boilers.
- 1 40-inch ditto
- 1 18-inch WINDING ENGINE and BOILER.
- 1 12-head CAST-IRON STAMPS AXLE and FITTINGS.
- 1 9-foot PUMPS, from 12 to 17 inch bore.

Workings, door and H-pieces, cases, with steam-hoses and glands, complete, from 12-inch to 19-inch bore, plunger poles, from 12-inch to 19-inch diameter, faggotted rod and cap plates, staples and glands, and iron and brass buckets, and prongs in great variety, a Phillips' mining dial (by Jordan) and stand, a telescope, spirit level and stand, an eight-day timepiece and case, several engine counters and boxes, and a great quantity of BRASS and OLD CAST and WROUGHT-IRON.

The MATERIALS at WHEAL VOR are DAILY ON SALE by private contract, and will continue to be so up to the time of sale by auction; and afterwards, for those remaining unsold, application to be made to Capt. R. Blight, Jun.

Dated March 6, 1850.

### TO IRON AND COALMASTERS AND OTHERS.

**TO BE LET, for a term of 21 years, at reasonable royalties, the** GARDEN HALL COLLIERY, situated in the parish of RUABON, in the county of DENBIGH, in the immediate vicinity of the Shrewsbury and Chester Railway, to which there is a branch or tramway from the works. This valuable mineral field consists of 80 acres, and contains the following seams of coal—viz.: 1-yard Coal, 5-feet Coal, 6-feet Coal, 8-feet or Main Coal, 3-feet Brassy Coal, Upper Yard Coal, 2-feet Red Coal, 24-feet Stone Coal, 3-feet Nant Coal, Lower Yard Coal, 3-feet Wall and Bench Coal, and Upper and Lower Half-yard Coals.

Also, BEDS OF IRONSTONE, of good per centage, connected with the Main Coal, Stone Coal, Upper Yard Coal, Wall and Bench Coal, and Upper and Lower Half-yard Coals. It also contains Fire-brick Clay, Pottery Clay, Freestone and Sand of the best qualities, and the whole of these seams of coal and ironstone, with the exception of a portion of the 3-feet coal, is unworked.

The several descriptions of coal above enumerated are extensively used as house coal and in the manufacture of iron, and the Yard, Wall and Bench, and Stone Coal, are celebrated for their excellence for household purposes, and for making coke for locomotive engines.—There are two steam-engines and other machinery erected upon the premises, which the tenant may purchase at a valuation, and several pits are already sunk to within a few yards of the Main Coal, and there is every facility for carrying on a large and profitable Sale Colliery, independent of the advantages to be derived from the manufacture of iron, and the proximity of the Shrewsbury and Chester Railway for the removal of the produce.

Full particulars may be had, and a plan and section of the stratification seen, on application to Mr. Humphreys Jones, Willow House, Wrexham.

### MINERALS ON LEASE.

**TO BE LET, BY PROPOSAL, for a term of years, with immediate entry, the MINERALS OF IRON ORE and IRON STONE, under the estate called FRIZINGTON PARKS, in the parish of ARLECORN, in the county of CUMBERLAND, the property of the Baroness de Sturbers, distant about 5 miles from Whitehaven. These minerals were worked in the years 1839, 1840, and 1841, and upwards of 10,000 tons of excellent "Cumberland Red Ore" were then extracted within a small compass.**

Mr. Joseph Wright, the tenant, at Parks, will show the estate and former workings; and further particulars may be known on application to Messrs. Armistead and Brockbank, solicitors, 42, Queen-street, Whitehaven, by whom proposals in writing will be received until Thursday, the 21st of March inst., when the tenant will be declared at Two o'clock in the afternoon.—Whitehaven, March 1, 1850.

### VALUABLE INVESTMENT.—The COEDCAE COAL

AND COKE COMPANY are desirous of having a PARTNER in one of the most ADVANTAGEOUS COLLIERIES IN SOUTH WALES, which is situated within 14 miles of the port town of Cardiff, to which place it is conveyed by the Taff Vale Railway, a branch of which extends to the colliery. They are at present in a position to work 100 tons of coal daily, which is of a very superior quality, and adapted for household use and also for coking. No. 1 vein is worked by level. There are also six new coking engines in daily work, 18x12x4, together with a newly-erected horizontal engine of high-pressure, for the purpose of sinking to the Cymmer vein. No. 3 is the Dinas vein, so celebrated for coking. The engine, machinery, and plant are in excellent repair.

The above will be found a most advantageous opportunity for investing capital, as the demand for the coal is extensive, and it is highly esteemed in the market in coal and coke. For particulars apply to Mr. Jos. Phillips, agent, Coedcae Colliery, Pontypridd, near Cardiff.—March 4, 1850.

### UNSTON IRON WORKS, NEAR SHEFFIELD.

Messrs. RANGLEY, WRIGHT, and Co. invite the attention of IRON MANUFACTURERS, IRON FOUNDRIES, &c., to their DERBYSHIRE PIG-IRON (smelted entirely with coke), which they can with confidence recommend for all purposes where purity of metal, combined with tenacity or strength, is an object. Their No. 3 pig-iron is sufficiently fluid for all descriptions of foundry-work. PIPING made from this quality will admit of almost any amount of hydraulic pressure. As a mixture with tender iron, or for purposes requiring great strength, their No. 4 is particularly adapted. For FORGE PURPOSES, the loss from waste in cinder, &c., is much below the usual average, and the product a very superior iron.

Messrs. R. W. and Co. also beg to inform RAILWAY CONTRACTORS, ENGINEERS, GAS AND WATER-WORKS COMPANIES, BUILDERS, MILLWRIGHTS, &c., that having purchased an extensive assortment of models and apparatus from Messrs. Wm. Graham and Co., of Milton Iron-works (who have declined business), and having engaged experienced workmen from that establishment, they are in a position to furnish ALL DESCRIPTIONS OF CASTINGS, suitable for the above branches, and at moderate prices.

### EAST WHEAL GEORGE MINE.—At an adjourned Meeting

of the adventurers, held at the Queen's Arms Tavern, Cheapside, on Tuesday, the 26th day of February, 1850.

W. E. D. CUMMING, Esq., in the chair.

The minutes of the preceding meeting were read, and the list of adventurers laid upon the table.

The several cost-sheets having been examined, were approved, and ordered to be entered in the Cost-book.

Resolved.—That the meetings of adventurers be held on the second Tuesday in every alternate month, the next being held in April.

Resolved.—That the thanks of the meeting be given to Henry English, Esq., for the services rendered by him, as also for his offer of superintending the accounts and correspondence of the mine, free from any charge.

Resolved.—That this meeting do adjourn until the 9th of April.

W. E. D. CUMMING, Chairman.

H. ENGLISH, Hon. Sec.

### THE MINING ALMANACK for 1850: compiled and arranged

by HENRY ENGLISH, Mining Engineer, &c. Under the special sanction and patronage of H.R.H. PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.—THE SECOND VOLUME will appear early in MARCH next, with ADDITIONAL TABLES and STATISTICS, connected with the Mining interests.—Names of subscribers are requested to be addressed to Mr. H. English, 28, Fleet-street.

**STEAM TO INDIA AND CHINA, via EGYPT.**—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS TO CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

**THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY** BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

**BOMBAY.**—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honorable East India Company's steamers.

**MEDITERRANEAN.**—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.

**SPAIN AND PORTUGAL.**—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and 57, High-street, Southampton.

**BANK OF AUSTRALASIA** (Incorporated by Royal Charter, 1835), 8, Austinfriars.—The Court of Directors GRANT BILLS and LETTERS of CREDIT on the undermentioned branches—viz.: Sydney, Maitland, Melbourne, Geelong, Hobart-town, Launceston, and Adelaide, on terms which may be learnt on application, either at their offices, 8, Austinfriars, or at their bankers, Messrs. Smith, Payne, and Smith.

By order of the board, WM. MILLIKEN, Sec.

**LOANS ON DEBENTURES.**—The CALEDONIAN RAILWAY COMPANY are prepared to RECEIVE TENDERS OF LOANS, in sums not less than £500.—Applications to be made or addressed to this office.

By order,

125, George-street, Edinburgh, Dec. 1, 1849. D. RANKINE, Treasurer.

### PARSEY'S COMPRESSED AIR LOCOMOTIVES.

The extraordinary public interest excited some time ago by this invention, was sacrificed by a company being formed, which, having done nothing, is dissolved, having committed with the inventor by paying law costs, compensation, delivering up all the machinery, and re-assigning the patent. The INVENTION BEING FREE, attention is again solicited to it, as the BEST MEANS OF IMPROVING and ECONOMISING the WORKING EXPENSES OF RAILWAYS—an object at this time of the first importance. The MODEL ENGINE may BE SEEN IN ACTION ON TUESDAYS and FRIDAYS, from Two to Four o'clock, and LICENSES GRANTED on application to Mr. Parsey, at 455, Oxford-street.

On Tuesday, March 12, in 1 vol. large 13mo., will be published,

**RAILWAY ECONOMY: A TREATISE ON THE NEW ART** of TRANSPORT—its Management, Prospects, and Relations, Commercial, Financial, and Social, with an Exposition of the Practical Results of the Railways in Operation in the United Kingdom, or the Continent, and in America.

BY DIONYSIUS LARDNER, D.C.L., &c.

London: Taylor, Walton, and Maberly, 28, Upper Gower-street, and Ivy-lane, Paternoster-row.

### PROGRESS OF SCIENCE.

Now ready, price 5s., with a Portrait of Sir John Franklin.

**YEAR-BOOK OF FACTS IN SCIENCE AND ART, for 1850**—containing the most important Discoveries and Improvements of the Past Year in all Branches of Science and the Arts.

By JOHN THOMAS, Editor of the *Arcana of Science*.

David Bogus, Fleet-street.

Will be ready for publication in a few days.

**MONEY VERSUS LIFE: A REVIEW OF COLLIDED CASUALTIES**—showing their Cause and Extent—the Parsimony of Coalowners—the Concealment of Deaths in Mines—the Inaccuracy of Returns by Corners—the necessity of Government Inspection, more shafts, and adequate Provision for Widows and Orphans of the Victims to Explosion, &c., with the means to provide for the same without unjust taxation;—also showing the Claims of Government towards the Coalowners of the North. By C. COLWELL.—Price 3s. 6d.

Stapkin and Marshall, London.

**EXPANSION SLIDE GEAL.**—The ARTIZAN, for March, price 1s., contains Four Plates, and Articles on a New Method of Working with a Variable Expansion without a Separate Valve, by J. Dudgeon, Inspector of Machinery to the Board of General Government Inspection, the cylinder, quarter size, and the air-pump bucket, half size—McConnell's Expansion Valve—Dimensions of various New Steamers—Designs for the Iron Founder—Abstracts of New Patents, and variety of intelligence interesting to the Mechanical man.—May be ordered of any bookseller; or will be sent free for 15 stamps, addressed to the *Artizan* Office, 69, Cornhill.

**BELL'S NEW PATENT LIQUID CEMENT IS READY** FOR USE, simple in its application, and only ONE-EIGHTH the cost of oil paint. For beauty it is pre-eminent over all other materials used on the fronts of houses, giving the exact appearance of fine cut stone; can be used at once on fresh Roman cement, or other plastering; is particularly calculated for country houses, villas, or gate enclosures, that have become soiled or dingy, which may be beautified in any weather at a trifling cost.—Sold in casks of one, two, or three cwt., at 8s., 15s., and 21s. each, casks inclusive.

**BELL'S PATENT MINERAL PAINT** more permanent and not half the cost of any other paint; invaluable as a coating for all kinds of wood or metal work, roofing, falls, leaky roofs, spouts, gutters, doors, sheds, ralls, all kinds of out-door work; requires no preparation, and will dry in a few hours.—Brilliant black, 2s.; rich brown, 2s. 9d. per gallon. Light colours proportionately cheap; and as they will keep for any length of time, well calculated for exportation.

G. BELL & Co.,

2, Wellington-street, Goswell-street, London.

### COMBAMARTIN AND NORTH DEVON LEAD AND

SILVER SMELTING COMPANY.

REGISTERED UNDER THE JOINT-STOCK COMPANIES' ACT.

The SMELTING-WORKS of the above COMPANY are in ACTIVE OPERATION.—SAMPLES OF LEAD and SILVER ORES are requested to be forwarded to Captain Cornelius Bawden, Combamartin, near Ilfracombe, North Devon.

Payment for ores by bill, at three months, or cash if required.

Combamartin, Jan. 1, 1850. THOMAS L. WILLSHIRE, Secretary.

### CARADON VALE MINE,

SAINT IVE, NEAR LISKEARD, CORNWALL.

PURSEY—Mr. John Stephens, St. Ives, Liskeard; Mr. Charles Collins, Exeter.

BANKERS—Mr. Sanders, Exeter; the Devon and Cornwall Bank, Exeter and Liskeard.

This mine is situated in the parish of SAINT IVE, near LISKEARD, CORNWALL, and was worked upon by several poor experienced miners a short time since, to develop that which they felt convinced existed there—viz., rich copper ore. They drove an adit 70 fms. to hill, and sunk a winze 12 or 15 fms. under that adit to cut the lode, when to their dismay they were completely impeded by the large quantity of water issuing from the lode, they having only water-barrels to draw up the same; sufficient was, however, seen to know that rich yellow and black copper ore existed against the cross-course. There are seven lodes, well defined, and carrying the most extraordinary masses that can be seen, with rich peach, prisms, felpars, and ore, and every other qualification to convince miners that great riches exist beneath.

It is proposed that the mine be divided into 1536 shares, at FIVE SHILLINGS PER SHARE, being the first deposit, and the liability of each shareholder is not likely to exceed £4 per share, as it is not expected more than £1 per share will be required. The calls, too, are moderately fixed, not to exceed 5s. per share every two months.

A large number of the shares are already taken up.

Application for the remainder may be made to Mr. Thomas Sanford, Exeter; Mr. John Stephens, St. Ives, Liskeard; Mr. Edward Saker, Exeter; Mr. James Timewell, Exeter; Mr. John Seymour, St. Cleer, Liskeard; and Mr. Henry Vatcher, Exeter.

To the Committee of Caradon Vale Mining Company.

GENTLEMEN,—I beg to state that I have visited this mine, and have much pleasure in offering you my observations upon it. I find that one lode only is opened on by a shaft pit, where it presents a most flattering appearance, being composed of very rich gossan, felpars, quartz, and beautiful white prisms. The strata is a soft clay slate, and very congenial for mineral. I have not the least doubt but that this lode will be found productive when explored. No practical miner can dispute the favourable appearance of the lode. There are several lodes farther north, but only one has yet been wrought on, and that only to a small extent; this lode is driven on about 15 fms. west, and about 5 fms. east from the adit, which came in about 2 fathoms from surface; the lode in the western end is about 4 feet wide; I consider it to be an extraordinary lode. I never saw one more promising at such a shallow level; it is composed of gossan, being impregnated with rich black oxide of copper, spots of yellow copper, blue peach, felpars, and mandle; it also carries a small felpars on the foot wall. A cross-course in the western end intersects the lode, and the backs are all corroded over with copper greens, which indicates that the lode, as well as the strata, is most completely mineralized, and I have no doubt but that the lode will prove very productive, both east and west of the cross-course. At a few fathoms deeper there is a shaft sunk, about 14 fathoms under the adit, and a cross-cut driven, and the lode cut by means of a cross-course, which let down a great deal of water; and from the want of machinery the poor miners, who worked at their own expense, were obliged to abandon it, without having cut through the lode, so as to develop its size or quality. I consider the mine to be a most promising investment, and all who engage in it cannot fail to be rewarded richly for their enterprise; the mine, from its situation, can be worked easily, and at a small outlay.

JOHN SPARGO.

Downgate, Stoke Climsland, Dec. 18, 1849.

**WANTED, in a Manufacturing Business and Iron Trade, a** PARTNER, who can command from £6000 to £8000, and who may be actively engaged or otherwise. The business is well established, and in full operation, yielding good profits, and capable of considerable improvement.—Communications, addressed to "As B.," 25, Basinghall-street, London, will have prompt attention. None but principals will be treated with.

### PARTNERSHIP, PURCHASE, OR MORTGAGE.

A very LARGE SUM OF MONEY is ready to be INVESTED in any undertaking that shall fully satisfy the parties to whom the money belongs.

Address by letter, free of postage, John James Coward, Esq., Lansdowne-crescent, Bath, Dated March 7, 1850.

**TO NOBLEMEN AND CAPITALISTS.**—The Proprietors of an extensive MANUFACTURING CONCERN, working their own MINES and MINERALS, are disposed to treat with a Gentleman, who can command £40,000 or £50,000, to take a share in the same. It would be a very safe and lucrative investment, and such as is rarely met with.

Applications from principals, or their solicitors only, may be made to "A. C.," care of Messrs. Heather and Moger, solicitors, Paternoster-row, London.

### TO GUNPOWDER MANUFACTURERS.—A Gentleman,

well acquainted with the Mining Districts of Monmouthshire and South Wales, is desirous of undertaking the SALE of POWDER in that locality on commission.—Address S. Vernon, Esq., Bank, Pontypool, Monmouthshire.

### RUNNAFORD COOMBE MINE.—An excellent opportunity

is now offered to any PERSON wishing to PURCHASE SHARES in the above valuable concern. Mr. CHENHALL has a FEW SHARES to DISPOSE OF, at £2 10s. per share.—Apply to Mr. Chenhall, 4, King-street, Woolwich.

### MINING SHARES.—PARTIES having SHARES to DIS-

POSE OF in DIVIDEND-PAYING MINES, or OTHERS, can obtain PURCHASERS by enclosing a list of the Number and Price of such Shares, when the same will be duly registered for sale, and a commission charged only on such sale taking place.—For further particulars apply to Mr. Durran, Mining Offices, 58, Lombard-st., London.

### MINING OFFICES, 3, GEORGE-YARD, LOMBARD-

STREET, LONDON.—Mr. T. P. THOMAS is a BUYER of SHARES in Wheal Seton, North Pool, Trevelick and Barrier, Condurrow, South Wheal Frances, South Beeston, South Tolgus, Trevelick, Mary Ann, Tolcarne, Tincroft, East Pool, Penardars Consols, Lisburne Mines, Esgar Lee, and West Wheal Treasury; and is a SELLER in Penzance Consols, Bedford, East Gunn's Lake, Cook's Kitchen, Carn Brea, Wheal Comfort, Gustavus Mines, Nanteos, Camborne Consols, Court Grange, Bwlch Consols, Stray Park, Tryphena, Wheal Margaret, Wheel Ovis, Providence Mines, and South Trevelick.

T. P. THOMAS is generally in a position to BUY and SELL at close market prices, and he will be happy to give information as to prices, &c., upon application.

### MR. H. B. RYE, GENERAL AGENT for the DISPOSAL

of MINING PROPERTIES, invites the attention of his friends and the public to the unusually FAVOURABLE TERMS on which INVESTMENTS may now be made in MINING SHARES. Ample information (for the guidance of buyers) may be had at his offices, 77, Old Broad-street, London.

### MR. T. A. READWIN, MINING OFFICES,

2, WINCHESTER-BUILDINGS, OLD BROAD-STREET, LONDON.

### MR. C. S. RICHARDSON, CIVIL ENGINEER, LAND

AND MINING SURVEYOR.

No. 15, OLD BROAD-STREET, LONDON.

### JAMES LANE, MINING SHARE DEALER.

20, OLD BROAD-STREET, LONDON.

### KESWICK MINING COMPANY, No. 76, CORNHILL.

Notice is hereby given, that the SCRP CERTIFICATES of this company having BEEN CALLED IN, are NO LONGER TRANSFERABLE, and that transfers of shares must, for the future, be registered in the books of the company.

Feb. 28, 1850. By order of the board, J. WATSON, Secretary.

### KINZIGTHAL MINING ASSOCIATION.—Notice is

hereby given, that all SHARES upon which the CALL made December 18th, 1849, of 5s. per share, shall not be paid on or before the 31st March, 1850, will, in accordance with the statutes, become absolutely FORFEITED.

By order of the board, GEO. COPELAND CAPPER, Sec.

1, Adelaide-place, February 19, 1850.

### UNION TIN SMELTING COMPANY.—Notice is hereby

given, that the HALF-YEARLY GENERAL MEETING of this Company will be HELD at this office on Wednesday, the 10th April next, at Two o'clock precisely, when the half-yearly statement of the company's affairs, to the 31st Dec. last, will be submitted, and a dividend declared.

Salvador House, London, March 8, 1850. P. WATSON, Secretary.

### GUADALCANAL SILVER MINING ASSOCIATION.

The following Resolution has been forwarded to the Directors of this Association.

"To the Directors of the Guadalcanal Silver Mining Association.

"Gentlemen.—Some doubt having arisen as to the validity of the Preference Shares, in consequence of their not having been paid upon at the time fixed, and much confusion and deterioration of value having ensued, we, the undersigned, being ten shareholders holding one-fourth of the undertaking, hereby request you will forthwith call a Special Meeting of the Shareholders, for the purpose of at once deciding this important question, and also to inquire into the financial condition and future prospects of the undertaking."

Notice is hereby given, that a SPECIAL GENERAL MEETING of the Shareholders will be held at the office of the Association, on Monday, the 11th day of March next, at Two o'clock precisely.

By order, H. T. RYDE, Secretary.

34, Broad-street-buildings, London, Feb. 20, 1850.

### ASTURIAN MINING COMPANY, IN LIQUIDATION.

AND THE PROPOSED ANGLO-ASTURIAN MINING COMPANY.—Notice is hereby given, that, in case the proposed Deed of Constitution of the proposed new Anglo-Asturian Mining Company shall be approved of at the Special General Meeting of the first above-named company, appointed to be HELD on the 26th day of March next, a MEETING of the shareholders who shall have agreed to form the said proposed new Anglo-Asturian Mining Company will be held on the same day, and at the same place, immediately after the said special general meeting of the said first-named company, for the purpose of approving the said Deed, and authorising the application for the statutes of an anonymous company, in conformity with the provisions of the said Deed, by the persons nominated for that purpose.

By order of the committee appointed the 27th November, 1849,

M. FORRESTALL, Chairman of the said Committee.

9, Austinfriars, London, Feb. 23, 1850.

### ASTURIAN MINING COMPANY.—IN LIQUIDATION.

A Notice is hereby given, that a SPECIAL GENERAL MEETING of this Company will be HELD on Tuesday, the 26th day of March next, at One o'clock precisely, at the Company's offices, No. 9, Austinfriars, London, for the following purposes—viz.: to take into consideration a report, and to approve of, or dissent from, the proceedings and proposals of the Board of Directors and Liquidators; also, the Report of the Committee on Reconstitution, appointed on the 27th November last, with the proposed Deed of Reconstitution, and Counsel's opinion thereon; also, such Proposals or Tenders as shall have been submitted for the Purchase of the Company's Property in Spain; and also the Forfeiture of Shares in default.

And Notice has been given on the part of the Committee of Investigation, appointed the 30th of August last, that the second interim report from that committee will be submitted to the said meeting, and with respect to the present constitution of the Board of Directors and Liquidators, it will be proposed to the said meeting to nominate Directors and Liquidators, if the meeting shall deem it proper to remove any of the present members of the board, and to appoint others in their stead, or to re-elect those whose qualification shall have ceased. And that it will be proposed to sanction the nomination of an arbitrator, with respect to any question or dispute with any member of the late Board of Directors; and, further, that special claims for exemption from forfeiture, and any special arrangement immediately submitted by any of the shareholders, shall be taken into consideration.

Pursuant to the Statutes, unregistered shareholders are not entitled to attend or vote at the meetings of the company; nevertheless, by order of the board, proprietors of such shares who shall have paid the present call will be admitted, on giving the names of their shares.

Proprietors intending to vote by proxy, are requested to notify to the secretary, on or before the 19th March, the numbers of their shares, and the names of the proxies to be authorised to vote, who must be shareholders qualified to attend that meeting, in order that the proper form may be forwarded. Proxies must have a stamp (5s. 6d.), which cannot be affixed after execution.

By order of the board,



## Transactions of Scientific Bodies.

## MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Royal Botanic—Inner Circle, Regent's Park	3 P.M.
MONDAY	Geographical—3, Waterloo-place	7 P.M.
	Medical—3, Bolt-court, Fleet-street	8 P.M.
	South Devon Geological—Ashburton	11 A.M.
TUESDAY	Medical and Chirurgical—53, Berners-street	8 P.M.
	Civil Engineers—25, Great George-street	8 P.M.
	Zoological—11, Hanover-square	3 P.M.
	Synagogue—71, Mortimer-street, Cavendish-square	7 P.M.
WEDNESDAY	Society of Arts—Adelphi	8 P.M.
	Geological—Somerset House	1 P.M.
	London Institution—Finsbury-circus	7 P.M.
	Graphic—Tatched House Tavern	8 P.M.
	Pharmaceutical—17, Bloomsbury-square	9 P.M.
	Ethnological—17, Saville-row	8 P.M.
	Literary Fund—22, Great Russell-street	2 P.M.
THURSDAY	Royal—Somerset-house	8 P.M.
	Antiquaries—Somerset-house	8 P.M.
	Royal Society of Literature—4, St. Martin's-place	7 P.M.
FRIDAY	Statistical—12, St. James's-square	3 P.M.
	Royal Institution—Albemarle-street	8 P.M.
SATURDAY	Asiatic—5, New Burlington-street	2 P.M.
	Westminster Medical—17, Saville-row	8 P.M.

## ROYAL INSTITUTION.

MARCH 1.—The Duke of Northumberland (President), in the chair.

Sir R. I. Murchison delivered an interesting lecture on "The Distribution of Gold Ore in the Crust and upon the Surface of the Globe," to one of the most numerous assemblies ever beheld in the theatre of this institution. The table was covered by specimens of gold ore, amongst which was a remarkably fine lump of ore, procured from California, upwards of 80 years since, for the Right Hon. Edward Ellice; the collection of Prof. Tennant; and the magnificent specimen belonging to Mr. Walla, weighing 6 lbs. 8 oz. 14 dwts. 12 gra., said to be the largest and purest lump yet received from that country, and to which reference was made in the *Mining Journal* of the 19th Jan. last, in our report of a lecture on "California—its Produce and Prospects," delivered at the Society of Arts. Large maps of the world, detached maps of Russia, &c., and a magnificent chart of the world on Mercator's projection, chiefly taken from Erman, were hung up to illustrate the lecture; and from the latter we quickly inferred that the popular belief that gold belonged principally to the warm regions of the south was fallacious, from the fact thereupon apparent that the greater mass of the precious ore by far was found to the north of the equator. Sir Roderick stated it to be an axiom that gold ore never occurs in any great quantity except under certain conditions or "Constants," which may be thus briefly explained to be where the ancient stratified rocks which constitute the backbones of continents, or great islands, have been penetrated and altered and crystallized by the intrusion of igneous or eruptive matter. The golden veins, which rise up from beneath have been carefully examined to a very considerable distance below the surface, and it has been ascertained that they invariably deteriorate in value—i.e., in the percentage of pure gold on the weight of ore—the deeper the search is made. All the rich portions are found near the surface; hence the powerful rubbing or attrition which that surface has undergone in ancient times, has, by grinding down the tops of mountains, carried away by far the greatest quantity of valuable ore, and distributed it in heaps of gravel and sand, in plateaus or in valleys. As an admirable, though familiar, illustration of this, Sir Roderick observed, that had the Hertfordshire or Surrey hills been crystalline or eruptive rocks, and not formed, as at present, of chalk, the gravel pits of Hyde-park and of Hampstead would have been the great gold mining ground of Middlesex and the adjacent counties, whilst the mud of the Thames would be auriferous only where small portions of gold had been washed by the waters from its ancient banks. The London gravel is of the same age as the detritus or rubbish of Siberia, which is so rich in ore, and also contains the mammoth and other great extinct fossil quadrupeds. Never has there been old discovered in any more ancient conglomerate, and thence the learned lecturer inferred that gold was of a very recent date as respects geological history, though of great antiquity as respects the human race. Indeed, the accumulations on the flanks of the Ural mountains clearly proved that iron and copper were formed before gold. These Ural mountains and Siberia furnish more than half of all the gold produced throughout the world. From the Ural mountains and the 25 districts of Siberia, in the region around the flourishing city of Krasnojarsk, of which one is 200 miles in length and 100 in breadth, where the metal is invariably found in the broken materials and debris above mentioned, nearly the value of 3,800,000*l.* in gold is annually derived. Precisely similar, geologically, are the chief backbones of the American continent, which also afford at intervals clustered collections of gold ore. It is right, however, to state a fact of immaterial importance, that California has not hitherto produced more than 1,500,000*l.* annually. The learned lecturer adverted to a remark, which seemed to amuse the audience not a little, made by Sir Robert Peel, when addressed a few years since by Sir Roderick on the probability of gold being found in Australia, that he hoped "We might not have too much of a good thing." The recent explorations of those intelligent and persevering American officers, Abert, Emory, and Peck, employed under General Kearney, proved that in all the long tract watered by the Rio del Norte, the Colorado, and the Gila, which had been, for the most part, long inhabited by civilized men, gold ore was known in two or three spots only, and then the real profit was derived from gold gravel.

Such would be the case in California; and Sir Roderick inveighed against what he might almost designate as the popular delusion, that all that region would prove equally productive of gold. Of course, his opinion was founded on the presumption that there be no deviation from the "Constants," which appeared, almost as far as they had been determined, to be a law of Nature. As a proof that gold in a mine diminishes as the solid rock is perforated downwards, the authority of Colonel Colquhoun, R.A., long resident in Mexico, was cited to show that in Guadalupe y Calvo, vein-stones opened out by British enterprise, though at first productive, gradually declined in value, and became poor as the ore was sought for deeper, and finally became purely argentiferous. The same was shown by Mr. Warrington Smyth to be the case in the gold mines of Hungary. Long before the discovery was actually made, Sir Roderick had inferred, from the descriptions of the Australian rocks by Count Strzelecki, that certain ranges there contained gold; and now Mr. John Phillips, a Cornish miner, had actually found that gold ore was disseminated there over the surface throughout 300 square miles. The learned lecturer expressed an earnest hope that her Majesty's Government would soon take some step to fix and explain the law touching mines, royalties, &c., which was to be enforced in that and other gold-producing colonies. A brief historical sketch of the subject was given, in which it was stated that Job was a true and good geologist, when he said "There is a vein for the silver," and "the earth bath dust of gold." It would be in vain to assign any limit to the productive value of silver mines when science had been fully applied to them, as they increase in value as in depth, whereas gold diminishes as we descend to seek it. In terminating this most admirable discourse, all of which was received with approbation, the learned lecturer reminded his audience that if the precious ore had remained locked up in solid vein-stones, and there interlaced with other minerals, alloys, and stones, it would have been incalculably less accessible to man than it is now, when distributed as a separate and loose material along the sides of hills and slopes of valleys. "If, however," said Sir Roderick, in conclusion, "we allow ourselves to speculate on the moral effects of this golden shower, we must, I apprehend, admit, with an ancient historian (Diodorus Siculus, but no geologist), that gold is obtained with toil, is retained with difficulty, creates everywhere anxiety, and in its use produces both pleasure and pain." The learned lecturer concluded his discourse amidst loud cheers.

## INSTITUTION OF CIVIL ENGINEERS.

MARCH 5.—WILLIAM CURTIS, Esq. (President), in the Chair.

Before the business commenced, it was announced by the secretary, that an electric telegraphic despatch had been received, communicating the gratifying intelligence, that at 7 o'clock in the morning of Tuesday, three locomotive engines, and 22 loaded coal-waggons, weighing in all 300 tons, had passed through the Britannia tube, over the Menai Straits, with perfect safety, and very satisfactorily to Mr. R. Stephenson, the engineer.

The discussion was resumed on Mr. Taylor's system of street paving, and was extended to such a length as to preclude the reading of any paper. It was contended that a rigid and unyielding substratum had been tried by Mr. Telford many years since, and had been used with success in some parts of the City paving, up to the present time. The average duration of the pavement of the streets in the City was stated to be eight years, but that it was constantly subject to injury, from being moved by the water and gas companies. The pavement on London Bridge, by Sir John Rennie, was instanced as a good, but expensive, example of the use of long narrow stones; and that by Mr. Walker, on Blackfriars Bridge, was quoted as another instance of the success that might be attained by great care in the preparation of the substratum, which was of concrete, and the stones of the pavement being laid with more than ordinary skill and care. The results in both cases were eminently successful, but it was allowed that such an expensive system, however beautiful, was not applicable to the ordinary streets.

It was admitted that, although the principal streets of the City and the main thoroughfares of the west and east ends were well attended to, yet it must be allowed, that the paving of the majority of the streets was not in a satisfactory state, and it was attributed, in a great degree, to the want of a definite system being adopted, there being too many authorities, in the shape of parish paving boards, each of which had a separate surveyor, too often equally inefficient and ill paid. The water and gas companies seem to vie with each other in their

endeavours to destroy the paving; and a portion of the Strand was quoted as having been removed 30 times within two years.

With respect to Mr. Taylor's system of paving, it was contended that the Mount Sorrel granite was a very superior material, such as regarded its toughness and durability, and that its natural structure enabled it to be worked very advantageously into the small cubes. The main features of the system was the selection of the material for the substratum, and the careful preparation, so as to afford a sufficiently rigid, but yet impenetrably elastic bed, whereon the small cube stones should rest. These stones being well driven down by repeated blows of light rammers, attained a degree of solidity which defied the heaviest traffic; and in the towns where the system was employed, considerable economy had resulted. The surface of the paving approached as nearly as possible to that of a macadamized road, affording even a safer foothold for the horses, and with less noise of passing vehicles. The surface possessed extraordinary durability, and it might be considered as a solid mass of granite. It was announced that, within a few weeks, there would be specimens of Mr. Taylor's system of paving laid down at the entrance of Hyde Park, where they would be subjected to regular traffic of a destructive nature, and which would be under constant observation.

A model of an improved crossing point was exhibited by Mr. Duncan, of Leeds; the notch in the rail was shown to be done away with, and the two rails in it were so dovetailed together, as to render any vertical motion between them impossible, thus materially strengthening the crossing. A piece of brickwork, set in Greave's blue lias lime, and which had been kept under water for nine days, was also exhibited. This material was composed of one-third of lime to two-thirds of burnt clay; and it was stated to have been used with great success in the tunnels on the Great Northern Railway, as well as in many hydraulic works, in which it was as durable as cement.

At the monthly ballot for members, the following gentlemen were elected: Mr. E. O. Tregelles, as member; and Messrs J. A. Agnew, W. Bevan, E. Goddard, J. D. M. Stirling, G. B. Thorneycroft, C. C. Williams, and Lieut. Douglas S. Galton, R.E., as associates. The next meeting was announced to take place on Tuesday evening, March 12th, when the following interesting paper would be read, "On Tubular Girder Bridges," by Mr. Wm. Fairbairn, M. Inst. C.E.

## OPENING OF THE BRITANNIA TUBULAR BRIDGE.

The opening of this magnificent structure, looked forward to with so much interest, came off on Tuesday last, with the grandest success. At half-past 6 o'clock A.M., three powerful engines (the *Cumbria*, the *St. David*, and the *Pegasus*), of from 50 to 60-horse power each, decorated with flags of all nations and union jacks, steamed up, and harnessed together, started from the Bangor station, carrying Mr. Stephenson (who drove the first engine through the tube) and the following gentlemen:—Mr. Bidder, engineer; Mr. Trevethick, locomotive manager of the London and North-Western Railway; Mr. Edwin Clarke, Mr. Latimer Clarke, Mr. Appold, and Mr. Lee. At precisely 7 o'clock the adventurous convoy, progressing at a speed of seven miles an hour, were lost sight of in the recess of the vast iron corridor. Instead of being driven through with a despatch indicative of a desire on the part of those who manned it to get in and out with the utmost expedition, the locomotives were propelled at a slow and stately pace, with the view of boldly proving by means of a dead weight the calibre of the bridge at every hazard. The total weight of the locomotives was 90 tons. The appearance of the interior of the tube during the interesting experiment was of a novel and remarkable character. The pauses that occurred during the progress of the transit furnished an imposing view of the interior of the gigantic structure, which, as contrasted with that of a tunnel of similar length, was rendered comparatively cheerful by the recurrence at intervals of loopholes of light, which serve the three useful purposes of ventilating, lighting, and divesting the tube of steam from the passing engines. The locomotives were brought to a standstill in the centre of each of the great spans, without causing the slightest strain or deflection. The first process—that of going through the tube and returning—occupied altogether 10 minutes. The second experimental convoy that went through consisted of 24 heavily-laden waggons, filled with huge blocks of Brynmor coal, in all, engines included, an aggregate weight of 800 tons. This was drawn deliberately through, at the rate of from 8 to 10 miles an hour, the steam working at quarter-power, and on the engines of this train, besides the gentlemen already enumerated, there were Mr. Hedworth Lee, the resident engineer, Mr. Charles Rolfe, Mr. J. MacLaren, Mr. Borthwick, Mr. T. L. Gooch, Mr. F. Foster, engineer, Mr. Binger, manager of the line, Mr. J. C. MacLaren, and a large number of scientific gentlemen. During the passage of this experimental train through the tube, a breathless silence prevailed that was almost solemn, until the train rushed out exultingly, and with colours flying, on the other side of the tube, when loud acclamations arose, followed at intervals by the rattle of artillery down the straits. Upon the return, which occupied about seven minutes, similar demonstrations ensued, and during the progress of the transit upon the tube, to ascertain any possible vibration reported they could detect no sensible deflection. After this, Mr. Stephenson and his staff steamed up to Plas Llanfair, Mr. Foster's seat, and partook of a handsome repast. Meanwhile the locomotives were passing up and down the interior of the tube, without eliciting the slightest manifestation of strain. An ordeal stronger still was then resorted to: a train of 200 tons of coals was allowed to rest, with all its weight, for two hours in the centre of the Carnarvonshire tube, and at the end of the time, on the lode being removed, it was found to have caused a deflection of only four-tenths of an inch. It is remarkable that this amount of deflection is not so much as one half-hour of sunshine would produce upon the structure, it being, moreover, calculated with confidence that the whole bridge might with safety, and without injury to itself, be deflected to the extent of 18 inches. These loads, it is most material to remember, are immensely more than the bridge will ever be called on to bear in the ordinary run of traffic, though the engineers are of opinion that it would support with ease, and without much show of deflection, a dead weight on its centre of 1000 tons. Twelve miles an hour is the limit of speed at which Mr. Stephenson intends that trains shall at first go through, more particularly as there are sharp curves at the termini of the tube.

During the trial of the dead weights very interesting episodic proceeding took place in the interior of the Carnarvonshire land tube—that of putting the last rivet into the plates, making exactly the 2,000,000th that have been used. The rivet having been put in by Mr. Mase, was driven home and fastened by Mr. Stephenson with successive strokes with a huge hammer. This ceremony was followed by the waving of hats and the deafening acclamations of the workpeople.

Mr. STEPHENSON, in a brief address, eulogised the industry of these men, and their devotion to their work. He could never forget the ingenuity and the labour exhibited in the tumbler sphere of the great operation, nor the masterly manner in which the work had been carried out under the superintendence of Mr. T. Fleet, who had distinguished himself as a sterling and honest workman.

It being now nearly 12 o'clock, another testing train was prepared to be taken through the tube. It consisted of the three engines, the 200 tons of coal, and from 30 to 40 railway carriages, containing between 600 and 700 passengers, packed together as closely as fish in a basket, all so clamorous and eager to "go through the tube," that it became impossible to accommodate them. At length, obediently to a long wild whistle, the train, which was almost long enough to cover the extent of the tube, glided slowly into the interior, saluted by a loud burst of "Rule, Britannia," from an array of Liverpool seamen up aloft in the towers at the entrance, on the front of which, cut deeply in the stone, were the words, "Erected Anno Domini, 1850: Robert Stephenson, Engineer." As the huge train traile slowly through the tube, successive salvos of artillery were fired at each end. This accomplished, the steam was got up, and the company assembled proceeded at the rate of 35 miles an hour, amid the magnificent scenery and snow-capped hills of Wales, to Holyhead, where they were received by all the principal townspeople, and with salutes from the steam-ships in the harbour.

The effect of the recent hurricane on the calibre of the tube has proved that its lateral surface strength is sufficient, and far more than sufficient, to resist the strongest wind. It is calculated that taking the force of the wind at 50 lbs. on the square foot—an excessive supposition—the resistance offered by the bridge would be 800 tons x 2 = 600 tons which is not two-thirds of its own weight. The wind going at 80 miles an hour, the rush of a hurricane, would only press in the ratio of 128 tons on the side. It is intended, when both tubes are up, to brace them together with stays so as to counteract any possible oscillation. The great work has now been years in hand, and is nearly complete, while Telford's suspension-bridge took eight years. The floating and actual transference of the tubes has occupied since June last—a short period when the bulk of the fabric is taken into consideration. Great fears were entertained for its safety during the late gale, from the recollection in this part of the country of the damage done to Telford's suspension-bridge.

The express train at 2 o'clock P.M. from Holyhead, which started ten minutes after the experimental train arrived, would have been sent through the tube, and thus have saved an hour; but this could not be done without the consent of the Railway Commissioners, unless under heavy penalties. It is understood that Capt. Symonds, the Government inspector, will inspect on the 9th inst., and report to Government; and the public inauguration for every-day traffic may be expected on the 16th inst. The inauguration was to have taken place on the 17th, St. Patrick's day, out of compliment to the natives of the sister isle, but that day happening to fall on a Sunday, this could not be accomplished. It may be interesting to know that the general opinion of the numerous engineers present yesterday appears to be that the Britannia tube bridge is as trustworthy as any tunnel on terra firma.

THE DISC ENGINE.—The Admiralty have ordered Mr. Rufford to remove his disc engine from the iron steamer *Mine*, and the vessel is to have her ordinary screw-working engines refitted, when she is to have some real employment in conveying dock-yard stores between Woolwich, Deptford, Sheerness, and Chatham.—United Service Gazette.

## Proceedings of Public Companies.

## MEETINGS DURING THE ENSUING WEEK.

MONDAY	Wheel May Silver and Copper Mining Company—offices, at Twelve.
	Guadalcanal Mining Association—offices, at Two.
	Sambro and Mouse Railway—offices, at One.
	Natal Company—Albion Tavern, at half-past Seven.
	London Commercial Sale Rooms Company—offices, at Twelve.
TUESDAY	United General Gas Company—offices, at One.
	Reading, Gaskford, and Reliance Railway—offices, at One.
	London and Dublin Bank—London Tavern, at One.
WEDNESDAY	West London Railway—London Tavern, at Twelve.
THURSDAY	South-Eastern Railway—London-bridge Tavern, at One.
	Metropolitan Stone Company—offices, at Twelve.
	Chester and Holyhead Railway—Euston Station, at Twelve.
	Irish Waste Land Improvement Company—offices, at One.
	Victoria Life Assurance Company—offices, at One.
	Clary Mutual Assurance Company—offices, at One.
	Land Company—offices, at Twelve.
FRIDAY	Gaspé Fishery and Coal Mining Company—offices, at Twelve.
	Mentor Life Assurance Company—offices, at Twelve.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

## RAILWAY PASSENGERS' ASSURANCE COMPANY.

The first half-yearly meeting of shareholders of this company took place on Wednesday, at the offices, Old Broad-street, City.

JOHN DEAN PAUL, Esq., in the chair.

Mr. ALEXANDER BEATTIE (the secretary) read the following interesting report, fully detailing the satisfactory progress of the company's operations:—

## REPORT.

The directors, in meeting the proprietors for the first time, are happy to be able to congratulate them on the successful establishment of the company, and on the steady progress of its business from the period when the office was opened to the public in July last. The Act of Parliament received the Royal Assent on the 26th June, and the directors lost no time in commencing the issue of tickets. Extensive as the negotiations were which had to be conducted with the railway companies, in order to obtain their co-operation in the issue of the insurance tickets at the various stations, the directors were enabled in the course of six weeks after the passing of the Act, to complete the necessary arrangements, and to establish the system on all the leading railways connected with the London and North Western line, the directors and principal officers of which took an honourable lead in affording the public the opportunity of availing themselves of the advantages afforded by the company to travellers; and now they are happy to state that insurance tickets, both for single journeys and periods of time, similar to those for which periodical railway tickets are issued, are obtainable on the following lines of railway:—

London and North Western, and branches  
Eastern Counties and Norfolk, and branches  
Great Western, and branches  
Midland, including Leeds and Bradford, and branches  
Birmingham and Bristol  
Lancashire and Yorkshire, and branches  
York, Newcastle, and Berwick, and branches  
York and North Midland, and branches  
East Lancashire, and branches  
Great Northern, and branches  
Lancaster and Carlisle, and branches  
Caledonian, and all lines connected with it  
South Devon, and branches  
Edinburgh and Glasgow, and all lines connected with it

And arrangements are in progress for the issue on the Manchester, Sheffield, and Lincolnshire, and the Shrewsbury and Birmingham Railways.

It is not because the directors have been indifferent to the establishment of the system on the other leading railways, which have their termini in London, that insurance tickets are not obtainable at the South-Eastern, North Kent, London, Brighton, and South Coast, and London and South-Western Railways. Numerous communications have passed between this company, and interviews have been sought and had with the respective chairmen and directors; but none of them have yet seen fit to concede the privilege sought by this company, and which has been so freely granted on almost every other railway in the kingdom.

On the reasons assigned for refusing to allow the public to obtain insurance tickets at the stations on those lines, your directors do not wish to offer an opinion, but they trust that the directors of all those companies may be disposed to re-consider the subject, and afford the desired facility of issuing the tickets of this company at their stations. The directors of the company, in the same manner as they are issued upon the system of railway above-mentioned. On the Great Western Railway, the system is in operation, as yet, at the leading terminal stations; the directors trust it will ere long be extended to all the important stations on that line.

The statement of accounts to 31st December last, has, in conformity with the provisions of the Deed of Settlement, been transmitted to the proprietors; the revenue of the company, for the period embraced in that statement, which being the earliest months of the company's operations, is necessarily limited, amounting to £1421 *fs.* 1*d.*, but since the 1st of January in the present year, the increase has been most marked; the directors trust that it will go on steadily increasing, as the utility of the company becomes more apparent, in virtue of the relief it has recently afforded to parties who have met with accidents, and have made claims for compensation.

No fatal accident has as yet occurred to any person insured by the company; but the great feature in the insurance effected with this company, which must render it most valuable in the estimation of the public, is the relief it affords in cases of personal injury, which it is well known are by far the most numerous of railway casualties. Of these, the instances in which parties held insurance tickets between the 1st of July and 23rd February, were 10 in number. In the several accidents on—

The London and North-Western, on 23d July, 1849,  
The Lancashire and Yorkshire, at Bury Station, on the 19th August, 1849,  
The Lancashire and Yorkshire, at Lytham Station, on the 20th September, 1849,  
The Blackwall, on the 7th November, 1849,  
The Liverpool and Manchester, at Hayton, on the 16th November, 1849,  
The Great Northern, near Askrone, on the 3d December, 1849,  
The East Lancashire, at the Magdalen Station, on the 1st January, 1850,  
The East Lancashire, near Openshaw Fold, on the 17th January, 1850,  
The Edinburgh, Perth, and Dundee, at Perth, on the 19th January, 1850,  
The Lancashire and Yorkshire, at Clifton Junction, on the 1st February, 1850,  
None of the sufferers held insurance tickets.

In all cases which have received compensation, except two, the claimants have been persons in such circumstances in life, that it is believed the compensation afforded them has been both acceptable and satisfactory—relief being promptly conceded, and the amounts agreed to without difficulty, or any necessity for recourse being had to arbitration. The directors are desirous to state, in the same manner as they are issued upon the system of railway above-mentioned, that a short statement of the cases which have been compensated for personal injury up to the present time. There were two gentlemen insured by the company, who suffered slightly from the accident to the up mail train from Rugby, on the night of the 28th January, and two more in the accident on the Caledonian Railway on the night of the 14th February, whose claims have not yet been adjusted, as the parties had not made them at the period when this report was written.

The single journey insurance tickets issued since the commencement of the company's business are as follows:—

	First Class.	Second Class.	Third Class.	Total.
1849—August	769	1187	652	2508
September	2591	3721	2038	8350
October	2413	3597	3218	9228
November	2275	4025	3588	9888
December	3349	5889	5988	15,226
1850—January	2516	4063	4903	11,482
Three weeks of Feb.	1797	2094	3640	7531
Total	15,710	24,586	25,047	65,343

\* Increase of insurance with increase of traffic.

The periodical tickets in each month, up to the 23d inst., have been as follows:—

	1849—July	1849—November	1849—December	1850—January
August	62	223	214	369
September	82	214	369	220
October	243	369	220	270—1683 tickets

These statements show a steady increase in the amount of business, and the directors have recently taken such steps, with reference to the issue of periodical tickets through the country, as to be able to state that the most respectable and influential members of the commercial travellers, who have agreed to act as agents, that they anticipate a very large addition to the number of insurances in the course of the year.

For some time the directors have had under consideration the propriety of extending the benefits of the company to that large class of persons who are employed on railways, and from being almost constantly travelling are necessarily subjected to a greater degree of risk than ordinary travellers, or even than railway officers of the higher grades. They consulted the eminent actuary, Mr. A. de Morgan, but the difficulty experienced in obtaining the necessary information and data, to serve in making a correct calculation of the proper premiums to be charged for such extra hazard as was involved in those cases, obliged the directors to delay, until very recently, the arrangements for insuring any other railway officials or servants than those of the higher classes, who, though travelling more frequently than passengers, have been dealt with on the ordinary terms. But arrangements have just been completed for insuring guards, engine-drivers, stokers, and all classes of railway servants who travel (the Act of Parliament not enabling the company to insure those classes of railway servants who are fixed at stations, such as policemen, porters, &c.) These insurances are for sums of 500*l.* or 200*l.*, to be paid in case of fatal accident, with proportionate compensation for personal injury, at a premium of 1*l.* and 10*s.* per annum respectively, and it is believed a very large number of persons for whom these insurances are intended, will readily avail themselves of them.

With a view to a wider extension of the benefits which the company holds out to those classes of railway servants above adverted to, and to effect other objects, which the directors deemed of great importance to the interests of the company, they have made application to Parliament in the present session, for some additional powers, including the insurance of goods and cattle, which had been pressed upon their attention by some of the railway authorities with whom they have been in correspondence.

The directors will not proceed to use these last-named powers, if conceded by the Legislature, till they have most carefully gone into such calculations as will justify their undertaking such risks with the fullest prospects of advantage to the proprietors.

The directors have received communication from France and America, within the last month, acquainting them that the system so successfully established by this company, is about to be established in those countries. The shareholders may receive the assurance of the directors, that their best efforts will continue to be given to the more complete development of the system in this country. They believe, that novel as this description of insurance is, and alight as the risk of railway travelling may be considered, there is still, even under the best management, some risk; and while the rate of premium is so low as to make it an easy matter for most men who travel to afford it, there can be little doubt that, ere long, it will become as common as insurance against the risk of travelling by railway, as it is to insure against fire, or any other description of hazard, which does not happen to every man; and the many will most probably not hesitate to let their premium go to the relief of the few who do suffer, each man knowing that it is possible he may be one of those few. At all events, the scheme will be fairly offered to the public, and its utility being already in some degree







## THE GOLD WASHING DISTRICTS—No. II.

BY E. HOPKINS, C.E., F.G.S.

The strange accounts sent to, and circulated by, the public papers, with respect to the supposed origin of the gold in California, and also the lectures given by scientific men on the same subject, endeavouring to prove the igneous origin of the gold-bearing rocks, and that the precious metal was thrown up at some imaginary epoch in geological time, clearly show that the formations of metals, mineral veins, streams, deposits, &c., are little understood. In some of the more recent letters received from the "diggers," we are informed that the geologists who had arrived there, were more at a loss in judging and looking out for the rich places, than the ordinary washers; indeed, it is said, that they and their "geological manuals," "guide to gold seekers," &c., make but a sad affair of it. How can we expect it otherwise? Those who wish to study such subjects, with the view of rendering geological knowledge really useful, must study the true character of rocks and minerals, *in situ*, and learn to separate geology founded on assumption, from geology founded on natural laws, otherwise their geological knowledge will be worse than useless, as seen in California. I have stated, in previous papers, that gold and other metals and minerals are often found disseminated in the primary rocks—i.e., in the granites, porphyries, and their oxidizing crusts—such as clay slate, or ferruginous silicate of alumina. In the *hard compact crystalline* rocks the gold is never found in grains; it is only detected in a very minute or aqueous state of saturation by analysis, or by very fine grinding and most careful washing; but after the change of the crystalline into the clay-slate, the gold becomes granular, and is deposited in flakes, crystals, &c., in the cleavage and fractures of the rock. In Gongo Soco the gold is found in the jacintha formation (ferruginous clay-slate), in some parts sufficiently rich to quarry the rock to obtain the gold disseminated therein. The same has been observed at Morro Velho. The clay-slate in which the lode is formed is often found to contain from 1 to 1½ ozs of gold per ton, and where this rock is fractured, rich veins of gold are necessarily formed. I have seen many similar rocks in New Granada and other places, producing gold by daily decomposition. The stanniferous granites of Cornwall present similar instances, the oxide of tin forming a component part of the granitic masses, and when such rocks decompose, they necessarily cause rich mineral deposits in the bordering ravines.

It is well known that the largest proportion of gold is obtained from rivers and superficial deposits, in granitic districts. The quantity extracted from veins is comparatively small, less pure, and depreciating both in quality and amount at moderate depths. Gold is always found in its metallic state, almost pure in alluvial deposits, but more or less alloyed when found in veins with minerals. There are no ores of gold, as often very improperly stated. This metal is never found mineralised in Nature; but inclosed commonly in iron pyrites, and frequently alloyed with other metals. The gold-producing rocks are not confined to particular geographical zones, as formerly supposed, but are found protruding, more or less, in all countries where the primary series is visible.

All the ferruginous and friable granites, containing yellow mica and pale yellow quartz, which are subject to disintegrate into spherical exfoliation, produce gold during the change. The auriferous granites of the Pacific coast, as well as those situated in the interior of South America, show this effect in a very striking manner. The internal crystalline character of this rock changes as it approaches the surface, by an almost imperceptible gradation, into a kind of globular structure, like a coarse conglomerate. During this superficial process of decomposition, black ferruginous mineral is formed, and in which the greater portion of the gold contained in the rock becomes crystallised into grains of various sizes, depending on the richness of the rock, and other circumstances, favourable for crystallisation or deposition. This loose oxidated surface of the auriferous granites is washed down by rains, and thus forming the gold washing deposit. Those of California are precisely similar; and the quantity will depend on the amount of the above deposited at the foot of the ridges and the valleys. Although veins of auriferous quartz, and sometimes pyrites, are often found in such rocks, yet they cannot be compared in value with the rich superficial production.

## PRODUCTION OF THE PRECIOUS METALS IN RUSSIA.

[The following are extracts from the Report of the Austrian Commissioners on the Exhibition which took place last year in St. Petersburg.]

**Gold.**—This is always an interesting topic, but doubly so at the present moment, and we shall, therefore, quote the report of the Austrian commissioners respecting it rather fully. The mines in which gold is found belong partly to the imperial domains, and partly to private individuals; they are found in the largest numbers in the neighbourhood of Katherinenburg, in the government of Perm, which is the seat of the superior administration of all the mines of Perm and Siberia. Gold washings exist in the district of Werchourie, in the government of Perm. Large quantities of gold are also found in Eastern Siberia; the first discovery of its existence was made in 1829. The mines on the Ural were not worked until 1814, and those on the Altai not before 1830. The gold found in the sand is of various forms and weights—pieces weighing 16 and even 24 pounds have been discovered; but the shape in which it is chiefly found is a fine sand. The mines in Siberia can only be worked during four months; and the gold hunters are compelled to obtain a license from the Minister of Finance. The Crown has a royalty of from 20 to 24 per cent. on all gold found, and every pound of gold pays four roubles for police and other purposes. The import and export of gold in all shapes is duty free. It cannot, however, be exported from the western frontier of the empire. The annual publication of the St. Petersburg Academy, for the year 1849, contains the official returns of the total amount of gold obtained in the year 1847. The following table refers only to the mines on the Ural, which, it will be seen, are by no means so productive as the mines in Siberia:—

From the Crown Mines on the Ural.	
Katherinenburg	(Poods) 35
Slatoust	48
Bogolouwak	34
Gowlingodatsk	10—127.
From Private Mines.	
Werch Iselsk	(Poods) 48
Kactinsk Kaschitinsk	13
Nischne-Tagilsk	28
Syrsk	27
Neziansk	19
Schaltansk	6
Billimbajewsk	2
Krestowodwischenak	18
Wesoloshchinsk	5
Werchne Ufaelsk	2
Itabansk	10
Other Mines	18—196.

Siberia produced in the same year the enormous quantity of 1456 poods. In the previous year the produce was 1677 poods.

**PLATINA** is found in the Ural mountains; the mines being worked by the Government and by private persons. The quantity produced annually has decreased very much of late years; in 1838 it averaged about 40 poods, while in 1847 it did not amount to 2, and in the following year only very little more. The present price is about 3600 silver roubles per pood. The exportation of this article is entirely free; manufactured platina is subject to an *ad valorem* duty of 25 per cent. France is the chief recipient of the platina exported from Russia.

**SILVER** is found in the Altai and Nertschinski mountains. The latter produce on an average about 207 poods annually. Some silver mines exist also in the Ural Mountains, but were only discovered in 1834. It may be imported and exported duty free, with the exception of exportation on the western land frontier. The total quantity of silver produced in 1846 was 1191 poods.

The various articles manufactured from the precious metals are described as of high finish and great elegance. The silver articles were more particularly remarkable. This branch of industry is a very ancient one in Russia, and is principally distinguished for the remarkably fine silver chains, which are manufactured in large quantities in Ustjug Welaki, a town in the government of Wologda. These chains are not thicker than an ordinary thread, and are worn by the lower orders to suspend their crosses on. They are principally made by women. Gold and silver articles pay an *ad valorem* import duty of 35 per cent. The plated articles exhibited were held by the Austrian commissioners to be a convincing proof that Russian industry has rendered Russia independent of the foreigner in this branch.

**VARIOUS METALLIC ARTICLES.**—The manufacture of articles from sheet copper, brass, and tin has reached a high degree of eminence; the lamps, spoons, forks, &c., exhibited were very good specimens. The commissioners seem to have been much struck with the Russian tea-urns, which are very similar to the old-fashioned English ones. The lacquered wares are very favourably noticed, with the exception of the artistic designs, which are described as tasteless and coarse.

**MACHINERY.**—Machines for cotton and flax spinning, and for cloth factories,

are principally imported from England; the importation is duty free. The value (in silver roubles) of the machines imported was, in—

1842.	1843.	1844.	1845.	1846.	1847.
817,208	975,286	1,318,692	1,830,323	1,918,072	1,884,447.

There are several large factories in full operation in Moscow, which produce very creditable locomotives and fixed engines. Iron steamers have also been built, which have been very favourably reported on. The smaller kinds of machinery are made in great perfection, and the mechanics employed are, in this instance, chiefly Russians. The value of the machinery made in Moscow, during the year 1848, amounted to 100,000 silver roubles, hardly a tenth of the value of the quantity imported.

## KILBRICKEN MINING COMPANY—WINDING-UP.

The second meeting, for the purpose of winding-up this company, was held before the Master Richards, by appointment, on Wednesday, Mr. Wright, the official manager, attended, with Mr. Rogers as counsel, for the purpose of taking the evidence of Mr. Henry Crookford, the petitioner for the winding-up; and he was attended by his agent, Mr. Larmon, who handed in a document, purporting to be a history of the rise, progress, decline, and fall of the company, as made by Mr. Crookford, and which he now wished to have placed on the file of the proceedings of this court at his affidavit.

Mr. Rogers read the document, which was very lengthy. After giving an account of the mode in which Mr. Crookford had become connected with the company (which we published in our last in his petition), it went on to state, that after two calls had been made, the directors found they had no power to enforce them—that before the sale of the assets of the company their value had been estimated at 2560*l.* 10*s.*, but the auctioneer, who had been subsequently consulted, said the materials had been overvalued, and that they would not sell for that sum; that petitioner then purchased them for 2270*l.*, because he had heard that a new company for working the mine was about to be formed. However, only two individuals had come forward for that purpose, and now there was nothing doing at the mine, and he feared he would lose 1000*l.* by the management on the file as an affidavit, but he might hand it in as his statement, upon which he (Mr. Rogers) now proposed to ask him some questions. He would also contend that Mr. Crookford still held 650 shares in the company, and that he could not get credit for any which he might consider he had transferred.

Mr. Crookford then, in answer to questions from Mr. Rogers, said—I am the owner of the mines, machinery, and materials now, except about 170 tons of a material called "black jack," and about 40*l.* worth of coals. I bought every article stated in the catalogue now produced except those. I also bought the interest in the lease of the mine, and it was I ordered the auction—at least, I did so by the authority of the directors, because a meeting had been held, at which the shareholders agreed that the company should be wound up, and they authorised me to do so. Two meetings were held—one on the 6th, and the other on the 22d July, 1848, at which the resolutions were adopted, ordering the winding-up and sale. (Here the resolutions were read.) I consider I was acting by the authority of those resolutions in calling the auction, and effecting the sale of the machinery, &c. I consider myself now the owner of the mine, and the whole of the machinery; I paid the purchase money (2270*l.*) at the sale to different parties. I paid the auctioneer 450*l.*, and I also paid the money due to the London and Westminster Bank, except a sum which they have transferred to my private account. I consider I acted under the authority of the resolutions in calling the auction, and that I am now the owner of the lease, and all the property under the purchase.

The SECRETARY to the company here stated that the auctioneer advanced 480*l.*—that was to say, 30*l.* more than he had received, as all the works had been stopped, and the workmen were all starving.

Mr. Crookford, in answer to further questions from Mr. Rogers, said that he had given a bill to his banker for 500*l.*, which was paid, so far as the company was concerned. He paid 160*l.* of it, and the remainder was placed to the debit of his own private account. The bill was taken by the bank in payment of their claim against the company.

Mr. Rogers: Well, but then I see by the bank-book that the bill you speak of was a bill discounted by the bank; how do you explain that?—Mr. Crookford (after looking at the bank-book account) said he could not explain it.

Mr. Rogers: But here is the bill-book of the company, and by that it appears that this bill was a bill payable by the company.

Mr. Crookford (looking at the bill-book): It would appear so.

Mr. Rogers: You take credit in your account for 561*l.* 8*s.* 6*d.*, but the bill is for only 516*l.*, which makes a difference of 45*l.*; how do you explain that?—Mr. Crookford: The difference of 45*l.* was a sum paid to me by two gentlemen, who were to form the new company; but I am going to pay that sum back, as the new company was not formed. I think there has been an error in the payment of those two sums into the bank to the company's account; they should have been paid to my private account.

Mr. Rogers: What do you consider the value of the property now to be?—Mr. Crookford: I think it is a very uneasable property; but I consider the machinery, &c., are worth the money I gave for them, if I could get it—I say that because the mine is in Ireland; it is more uneasable than mining property in general. I may say I nominally got 6500*l.* for half the mine, but I paid back 3000*l.* as capital to carry on the works; that money has been spent upon the mine.

Mr. Rogers: Was the lease put up at the auction?—Mr. Crookford: Yes; everything was put up at first, but as there was no bidding, the lease and the steam-engine, and the machinery under water, were next put up in one lot, and I bid 650*l.* for them. I have since tried to sell the steam-engine for 700*l.*; I purchased it originally for the use of the company for 800*l.*, and the freight amounted to about 140*l.* more. The machinery under water would be worth about 200*l.* if it could be got out, but I do not think it likely it ever can be got out. I was the original projector of the mine; I was living in the county, and I thought it a valuable property. It was got up in this way.—My brother communicated with me, and he communicated with Mr. Evans, and the company was started, and I agreed to it, if I could get my terms. Mr. Evans was to get 100 free shares, and my brother 50 from me; the prospectus was sent me, and I approved of it. I have no doubt the printed prospectus now before me is the same as that I approved of, but that copied into the book is not the same.—It being now four o'clock, the inquiry was adjourned.

**WINDING-UP OF RAILWAYS AND JOINT-STOCK COMPANIES.**—It is rumoured that a new Master in Chancery will be appointed to meet the increasing amount of cases under the Winding-up Act. There are now upwards of 100 in operation, being at the rate of 10 to each Master, and they are found to impede very much the progress of many private suits.

**CHEPSTOW, FOREST OF DEAN, AND GLOUCESTER.**—On Friday the winding-up of this company's affairs came on before Master Kindersley. All the shares, to the extent of 30,000, were allotted; and 65,000*l.* was received from the shareholders, on account of deposit, by the managing committee, consisting of Sir W. Twyden, Sir W. Johnson, Alderman Hughes, Major White, and Messrs. E. F. Dayrell, G. Lawton, E. Hall, W. P. Andrew, C. E. Coleman, W. S. Fitzwilliam, J. Morrison, and W. F. Beaden. Surveys were made, and expenses were incurred; the undertaking was subsequently dissolved, and 28*l.* per share returned out of the deposit of 2*l.* 2*s.*; but no account of receipts and payments was rendered. The secretary represented at this period that there was 12,000*l.* more in hand, that the accounts would be made up, and a further return made; but this was not done. The petitioners further represent that the proportion of deposits retained for expenses was 22,000*l.*, though the line was only 28 miles. Some time after the provisional committee projected another line, called the Welsh South Midland, and petitioners allege that the whole of the expenses of the new scheme were paid out of the funds of the Chepstow and Forest of Dean Company, and they have reason to believe that 11,000*l.* out of the 22,000*l.* before-mentioned was, without the knowledge or consent of the shareholders, appropriated for this particular purpose. Notwithstanding the retention of this large sum, there are debts still undischarged, and the petitioners pray for inquiry into this misapplication of the funds, regarding which no explanations have been given by the directors or committee of management.

**DIRECT WEST-END AND CHRYDON RAILWAY.**—On Wednesday last Master Tinney proceeded with the settlement of class 1 of contributors to this undertaking, consisting of 100 provisional committeemen, three of whom, Major Beresford, Dr. Anderson, and Mr. Underwood, were summoned and examined. Major Beresford, to save the time of the Court, and the expense of a tedious examination, admitted his liability as a member of the provisional committee. Dr. Anderson urged that he had no recollection of having been a member of the provisional committee, until a letter in the Doctor's own handwriting was produced, written in 1845, and addressed to the members of that body, expressing an anxiety to have the week-day meeting of the board altered to suit his professional engagements.

**ISLE OF AXHOLM, GAINSBOROUGH, AND GOOLE RAILWAY.**—The settlement of the list of shareholders came on before Master Sir W. Horne, on Tuesday, July 7, 1849.—To Professor Holloway—Sir, A cure has just come under my observation, in which the efficacy of your ointment and pills has been fully proved. A man of the name of Joshua Smith had upwards of 20 sores on his shins, which were so difficult to cure, that almost every remedy had been applied without any good effect. Your pills and ointment were then resorted to, and in about six weeks he was completely cured, and scarcely a mark is to be seen.—Sold by all druggists; and at Professor Holloway's establishment, 244, Strand, London.

**TWENTY ULCERS ON THE LEGS CURED BY HOLLOWAY'S OINTMENT AND PILLS.**—Extract of a letter from Mr. O. B. Knozer, dated Mount Gambier, South Australia, July 7, 1849:—To Professor Holloway—Sir, A cure has just come under my observation, in which the efficacy of your ointment and pills has been fully proved. A man of the name of Joshua Smith had upwards of 20 sores on his shins, which were so difficult to cure, that almost every remedy had been applied without any good effect. Your pills and ointment were then resorted to, and in about six weeks he was completely cured, and scarcely a mark is to be seen.—Sold by all druggists; and at Professor Holloway's establishment, 244, Strand, London.

## Mining Correspondence.

## BRITISH MINES.

**ALFRED CONSOLS.**—Field's engine-shaft is sunk to the 70 fm. level; the shaftmen are making preparations for driving east and west at this level. The lode in the 60 fm. level west is 8 ft. wide, and on the north part is a branch 6 to 8 in. wide, yielding copper ore of good quality; the lode here has a much better appearance than for some time past; the lode in the 60 fm. level, east of the engine-shaft, is from 4 to 5 feet from 30*l.* to 40*l.* per fm.; the copper is extending east quite to our expectations. We have commenced sinking a winze under the 60, east of the engine-shaft; lode 5 ft. wide, level east is suspended for the week.

**BARRISTOWN.**—We have intersected in the 30 fm. level west end a lode taking a westerly course, and running nearly at right angles with the north end we were driving on; it is about 10 inches wide, with a south underlay, and for the greater part of 2 fm. which we have driven on its course, there has been a branch of lead, sometimes 3 in. wide, and at other times not more than 1 in. wide, besides a mixture of lead and copper ore. We have done but little in the 30 fathom level west end, on new lode, since our last, but shall now resume driving it; in the 30 fm. level east the lode is still stopping on tribute, in much the same as last reported. We are down about 7 fms. in the lode in the bottom of the 30 fm. level.

**BEDFORD UNITED.**—The summer have been employed during the last month in dividing and casing the shaft down to the 115 fm. level, and in cutting ground for plat, &c. The whole of this preparatory work will soon be completed, and the sinking of the shaft resumed. In the 103 fm. level, the driving from the shaft eastward, and from Burley's winze westward, is held, and the men are now set to complete the tramway of its being sunk deeper. In the 103 fm. level, east of Burley's winze, the end has been lodes. In the present end there is a lode 2 ft. wide, very good work, and likely to be much better in a few days. The north wall of the lode is not as yet reached, and we shall, therefore, continue the driving on its present bearing. The lode in the 90 end east is 30 in. wide, good saving work, and leaves better tribute ground than we expected. In the 70 fm. level the end has been extended, for the last 7 or 8 fms. by the side of the lode; we are now cutting into it, and shall be able to report on it next week. In the 47 fm. level the cross-cut north is progressing favourably, in a good clean kilas, with a few indications of mineral in small branches, crossing the driving. The pitches are yielding a full average quantity of ore, and we have sufficient broken for our next sampling. The ore sold in Feb. weighed 114 tons 3 cwt., and the parcel sampled is computed at 119 tons, which will be sold on the 21st inst.

**BODMIN CONSOLS.**—The wheel is nearly completed; we shall now get on fast with our surface work, and I hope to be sinking in a fortnight. The lode in the south adit continues to improve, both in size and quality, with large stones of lead; the ground is soft for driving, and set at 1*l.* per fm.—nothing can look better. Since writing the above, Hooper, one of our tributers, has just sent in from the same end one of the best specimens of arseniate and carbonate of lead I ever saw.

**BRYN-ARIAN.**—The 10 fm. level, driving west from the engine-shaft, is much improved within the last three or four days; the lode is 4 ft. wide, with a good mixture of ore. The 10 fm. level east is rather improved—a little more ore than last reported. The long and short engine-shaft to sink under the 10 fm. level on Saturday, by six men, to be carried 10*l.* 10*s.* per fm. The men to pay for drawing all their stuff to the adit level, at 10*l.* 10*s.* per fm. The two slopes east and west of the winze, east of the engine-shaft, are the same as last reported, each yielding about 15 cwt. of ore per fm. The lode in the adit level east is very large, and spotted with ore; the lode in the adit, sinking under the shallow adit level, is 6 ft. wide—much the same as last reported. We hope to sample 20 tons of ore the beginning of next week.

**CARADON VALE.**—Mr. Robert Dunstan writes (Feb. 26).—Agreeably with your request, I have inspected the above mine, and report as follows:—A cross-cut adit has been driven northward from its mouth 50 fms., where a very promising lode is seen, ranging from 1 to 2 and 3 ft. wide; it is composed of gossan, spar, peach, iron pyrites, &c., and contains carbonate of copper, located in a beautiful kilas strata, at a little distance from the granite range of Caradon, and is bounded on the north by Tokentary, and on the south by South Caradon Mines. The lode is one of great promise, and its situation most favourable; and, on the whole, I judge this adventure to be every way worthy the attention of mining capitalists.

**CARTHEW CONSOLS.**—At the upper mine, in consequence of the summer having had to put down the sinking lift, and additional pieces of main rods (which are now complete), to enable them to prosecute the sinking to the 75 fm. level, the engine has been 1*l.* for the greater part of this week, which has caused the suspension of the ends in the 65 fm. level for a considerable portion of the time since my last; therefore, I cannot report nothing new at all in the tributer department. I have made as great an increase as practicable in the tribute department this week, by augmenting and increasing the pitches; this department looks better than at any former period. The foundation stone of the steam-whim and crusher house will be laid early in the coming week. At the lower mine, the lode in the adit end south verges fast to the west, and the lode is very wet; and I am led to suppose we are nearly approaching the upper mine lode.

**CEFN GWYN.**—Last month I took the men back from the end driving east, finding the lode poor, and put them to sink the old winze, which is in about 5 fms. from the cross-cut; we find the lode increases in size and quality in sinking; we are carrying in saved for dressing; there are 6 men sinking this winze, having removed two from the western end. The lode in the level driving west is still large, with spots of lead ore, but nothing to save.

**COURT GRANGE.**—Last Saturday was our setting at the Court Grange Mines. We set the Pen-y-Cefn engine-shaft to sink 10 fms. for 90*l.*, and the Llettyhen shaft to sink 10 fms. for 60*l.*, but here we arranged our underground bargains so that the cost will not be increased in doing this work. Our drawing machine we expect to get to work very shortly; and I am glad to say our bargains underground we expect to get a good quantity of ore, rather more than I anticipated they would have done, and are at present looking quite as well as they have ever done. The end east in the 30 fm. level lode at present is not rich, but from the ground seen in the 16 fm. level, we may reasonably expect a good course of ore before the end, but the expense of this will not be great, but we shall have to enlarge our mine flooring, and my opinion is, that from this time very carefully gone into the state of our affairs, and my opinion is, that from this time onwards, our accounts will stand the right side of the book—from 50*l.* to 70*l.* a month to level, and the lode laid open a few fathoms. We are now sampling about 15 tons of ore from Pen-y-Cefn, and about 5 tons from Llettyhen, which will more than meet the cost this month.

**CRADDOCK MOOR.**—The shaft is now between 12 and 13 fms. deep from surface, and the walls of the cross-course still retain their vertical direction. The ground in the shaft is at present harder than it has been—I expect, in consequence of its coming near Dunstan's lode, which will be in the shaft in 3 or 4 fms. more. We have some veins in the shaft, with spots of copper ore in the days. The shaft is now very deep for drawing the stuff by manual labour; and, as the days are getting longer, I would recommend that the engine be removed as soon as the weather gets a little settled; and, in addition to drawing the water, we shall be able to draw the stuff with the same cost meeting appeared in last week's Journal.]

**DAREN.**—Feb. 28.—We are now building the wheel-pit, and we hope in about six weeks, if we get the crusher, that we shall begin to dress ore. The ore-ground certainly that we shall soon be realising a good profit; in fact, all along the face of the hill, the line of the lode is covered with large heaps of copper and silver-lead ore, and in the old open cuttings (which we are clearing out) we are finding a number of stone-hammers, the relics of a far bygone age, probably belonging to the earlier stages of the history of metals, if not the very earliest. At the foot of the hill, which in this place is about 600 feet high, we are erecting our crushing-mill and dressing apparatus, bringing about appliances to bear upon what was the site of the labours of a ruder age, as the stuff was thrown into the crushing-mill from the place where the old stone-hammers are found, showing that the earliest and latest ages of man have had the same object in view; most probably the Daren was then worked for copper, as the ore of this metal is here found peculiarly soft, yielding, as a sulphure, 20 per cent. of metal. We may indulge in the notion that this vein might have afforded metal that formed the weapons of war of our forefathers; we may, therefore, allow myself to flatter into the hope that it may produce the arms of (by some strange alchemy of names converted into that of *tin*) the distinguished generation, especially as the lode contains an abundance of silver and lead for a considerable distance.—March 5.—The mine continues to look as well as it is possible to expect. The lode stopping down in the side of the level Cood adit continues exceedingly productive, and we are making rapid progress in opening this level for a railroad. The ore, also in the back of the level Cood, is very good, and everything bids fair to give us a rich mine.

**EAST BIRCH TOR.**—I am happy to inform you that the tributers' tin fetched 45*l.* 2*s.* 6*d.* per ton at the Calenick Smelting-house; and we have this week sent off 24 tons of proprietors' tin to Mitchell's, of Truro, equal to the last. We have no alteration in our workings since my last report.

**EAST CROWDALE.**—At the middle shaft, sinking below the 28 fathom level, there is still a fair lode, about 10*l.* per fm. in the same level east, the lode is large and tiny, but not rich; the same level, west of middle shaft, and east of sump, has been communicated to the driving from this point. Our tribute pitches throughout are looking well. Our January and February ores are now at surface, and will all go under the stamp next week, and we hope to sample about the middle or latter end of the following week all the tin promised in last report, and also 2 tons of November and December tin.

**ESGAIR LEE.**—Our pay and setting was on Saturday last, March 2, and the following is an account of the latter:—The deep adit, east of Morgan's winze, on the level lode, by six men, 1 fm., or cut through the lode, at 3*l.* 10*s.*; the deep adit, west of Morgan's winze, on the north lode, to carry all the lode, or 6 feet wide, by six men, 3 fms., or the moiler, at 6*l.* 10*s.* per fathom. The 12 fm. level, west of Morgan's winze, on the north lode, to carry all the lode, or 6 feet wide, by six men, 3 fms. stent, or the month, at 4*l.* 10*s.* per fm.; the 12 fm. level, east from surface, on the caunter lode, or 6 ft. wide, by six men, 3 fms. stent, or the month, at 5*l.* 10*s.* per fm. To stop the back of the deep adit, west of the cross-cut, on the north lode, by six men, 10 fms. stent, or the month, at 1*l.* 10*s.* per fm. During the past week we have not done anything in the deep adit on the caunter lode, west of the junction, lode being the same as when last reported, but as my last report is put in, the level will be resumed. In the course of another week or 10 days, I think we shall ascertain whether the caunter lode is running behind or south of the present level, also south of Morgan's winze; the lode here is much the same as last reported. The new or north lode in the deep adit, west of Morgan's winze, is looking very promising, being 5 feet wide, and will yield, on an average, from 20 to 30 cwt. of ore per fm. The lode in the 12 fm. level, west of Morgan's winze, is improved since from 10 to 15 cwt. of ore per fathom; in fact, on the whole, our prospects are improved since my last report. We have fixed on the site to erect the 40-hp wheel and crusher, and will have the wheel-pit cut out as soon as possible. I feel deeply thankful for your kindness in the appointment of another agent to these mines to assist me.

**EAST WHEEL GEORGE.**—The survey took place this day, according to notice, the result of which I beg to submit:—Roadway to form, clear, and build hedge,



17 ft. wide, 2s. 6d. per running yard; surface work, removing soil for buildings, 14s. 6d. by 20 ft. for the sum of 50s.; wheel pit to excavate, 2s. 6d. per cubic ft. from surface to 10 ft. depth; lobby to west end pit 2s. 6d. per ft.; engine-shaft to sink to add, 9 ft. by 6 ft. 6 in. in timber, and drive 6 ft. back to east end of pit 2s. 6d.; smiths' shop and count-house as per plan, masonry, lathe, and nails, 5s.; wheel-pit 4 ft. thick for wheel, 40 ft. by 12 ft. 6 in. 12 ft. 6 in. all carpenters' work, timber for porch, doors and account-house door with deal 12 ft. 6 in. drawing stone from quarries, 9d. per perch, about 240 perches required for wheel-pit, smithy, count-house, &c.; carriage of timber from Plymouth 3d. per ft., and iron 6d. per cwt.; sawing banika 2s. 4d. per 100 ft., fr. 2s. 9d.; oak, beech, &c., 4s. 10s. in the whole, the prices, with industry and application on the part of the takers, will be remunerative, and should be satisfactory both to them and the adventurers. The bargains having been set, I am happy to say the weather is very propitious for speedy work. No time shall be lost in getting the men in readiness for the work, so that we may at once start. Capt. Hockings, who lately visited the mine, estimated the ore at surface, at 12 to 15 tons, worth 10s. per ton; however, in time this will be seen, as our operations now will be confined to preparatory work, before putting ore to ticketing. About 11 fms. were laid open in the lobby last week.

**GNAMENIA.**—In the 17 m. level Taylor's lode is poor and small. The 33 m. level, on Taylor's lode, is suspended for the time; the men are rising in the back of this level, to meet a wire sinking from the 17, to have air to extend these levels. In the 60 m. level, on Gilpin's lode, the lode is 9 inches wide, saving work, and producing half a ton of ore per fm. We have cut Gilpin's lode in the 90 m. level, and driven on the east side 6 ft.; the lode is 2 ft. wide, spotted with ore; we have not commenced driving on the west part, but hope to do so in a few days. We sold on the 21st Feb. 33 tons of ore, at 9s. 10d. per ton, the amount of which covers four or five months' cost. [The particulars of November and December account meeting appeared in last week's Journal.]

**HEIGNSTON DOWN CONSOLS.**—We have cut the lode in the eastern cross-cut, which so far as cut into (which is 3 ft.) is of a very fine description, composed of gossan, peach, prill, and munda, with excellent stones of yellow, grey, and black copper ore. The other two cross-cuts progress satisfactorily; the wine sinking below this level—viz., the 35—is looking better, carrying a good leader of ore on the north part of the lode.

**HOLMBUSH.**—The lode in the 120 fm. level south is 4 ft. wide, composed of quartz and stones of lead; the stops in the back of the level will produce 5 cwt. of lead per fm. The ground in the 120 fm. level cross-cut south, towards the flag-jack lode, is still very favourable—set at 22. 10s. per fathom, and should it continue as at present we shall intersect it in four months from the present time. The ground in the 110 fm. level cross-cut west is also favourable, being set at 4s. 10d. per fm., still letting down a pretty deal of water. The flag-jack lode in the 100 fm. level, east of the great cross-course, is 20 in. wide, composed of spar, munda, and stones of copper ore; the tribute piches in the back of the level are still productive. We have sampled a ton of silver-lead ore, computed 36 tons, to be tendered for on or before the 13th inst., agreeable to circulars which have been sent, together with samples of the same, to all the lead smelting companies.

**KESWICK.**—There is no alteration in the 10 fm. level rise at Bramley since my last report. The lode in the 20 fathom level north is looking very promising, being composed of spangled ore, with a string of solid ore running through it; in the 20 south the ore is looking well. In the 25 fm. level the ore is better than last week; it is a splendid sample, and will make excellent potting ore. In the 17 fm. level, at Thornthwaite, there is no alteration since last week; in the 17 fm. level, the vein looks promising. In the bottom level nothing has been done since last week, owing to the stoppage of the wheel, for the purpose of enlarging the conduit, which takes away the waste water.

**KIRKCUDBRIGHTSHIRE.**—The lode in the 62 end, west of Stewart's, is 4 1/2 ft. wide—a large spar and carbonate of lime, with fine spots of ore through it—yielding 5 cwt. to the fm.; the lode in the 62 end, east and west of Keith's, is still barren, although the lode in the west end is improving a little in appearance. The lode in the 50 end, west of ditto, is 2 1/2 ft. wide, with small spots of ore. We are looking out for a vessel, to ship a cargo of ore next week.

**LAHEROEE.**—Report from the superintendent:—I merely write to say that so far in my inspection of this mine things are very satisfactory. I have not gone through all details yet, but I expect by the end of this week or beginning of next. In driving north from the engine-shaft in the 60 fm. level, by the side of the cross-course, the lode that was cut at the shaft is again intersected, after being heaved 9 fms. 4 ft.; the main leader is about 20 inches wide, composed of white munda, with spots and veins of yellow ore, and the contiguous branches are of the same composition, evidently in a disordered state, by reason of being so close to the cross-course; four men are set to drive east on it at 5s. per fathom. The stratification continues in the end, and throughout the level, of the same compact kilas—soft and pale. The water coming out from the cross-course in the end of the level is warm, almost tepid, whilst that from the country is very cold; this fact would lead one to believe that, in extending on this cross-course, some considerable quantity of ore would be found to the north—perhaps one great lode. We are sinking a few feet on this lode from the surface, to ascertain its exact bearing, and when we may probably cut it from our engine-shaft; perhaps it would be advisable to sink down on its course a few fathoms; its size and bearing on the surface demand a speedy investigation. At Stewart's shaft, the cross-cut south is driven about 4 fms., and we think it will make good for any distance in the end, in the end, about 7 to 8 fms. further driving to intersect the Benny caunter; the stratum at this depth (50 fms.) is compact, and not near so changeable, and the edges of the rock are covered with munda—a favourable indication. The same level, driving north of Davey's shaft, is about 9 fms. from the shaft, and we may calculate about the same distance to drive to cut the lode that has been intersected in the shaft in the 30 fm. level. The uniformity of the kilas—pale, soft, and compact—in all the deep levels, may be considered of great importance, showing that we are below the influence of the uncongenial upper strata.

**SOUTH PLAIN WOOD.**—I have great pleasure in being able to report a most favourable improvement in Nicholson's lode. There is now a quantity of gossan of fine quality, with yellow and a little grey copper, and every appearance that, on driving further in the hill, we shall have good saving work. The appearance of the lode on the hill is also of a very favourable character—in fact, nothing can be finer than some of the gossan, which, perhaps, may contain silver; but I have not tested it. Altogether, I should say our prospects are very encouraging.

**SOUTH WALES MINES.**—Our pay and setting was on Saturday last, the 23 March, and the following is an account of the latter:—The cross-cut north, by six men, 6 fms. stent, or the month, at 21. 10s. per fm. The shallow level, east of the old workings, by six men, 3 fms. stent, or the month, at 21. 10s. per fm.; the lode is 12 feet wide, and looking very promising, with a branch of ore on each wall from 1 to 3 in. wide, with veins of ore running through the lode, and will yield from 6 to 10 cwt. per fm.; on driving further in the hill, we shall have good saving work. The appearance of the lode on the hill is also of a very favourable character—in fact, nothing can be finer than some of the gossan, which, perhaps, may contain silver; but I have not tested it. Altogether, I should say our prospects are very encouraging.

**TRELAWNY.**—In the 82 end, north of Phillips's shaft, the lode is 2 feet wide, worth 13s. per fm.; in the same level, south of ditto, the lode is at present split into branches, and worth about 4s. per fm. In the 72, north of ditto, the lode is 1 1/2 ft. wide, worth 7s. per fm.; in the same level, south of ditto, the lode is 2 ft. wide, worth 3s. per fm. In the 62, north of ditto, the lode is 3 ft. wide, worth 14s. per fm. Trelawny's shaft continues to go on favourably, and is now down 5 fms. under the 82 level. In the 82, north of the shaft, the lode is 3 ft. wide, worth 8s. per fm.; in the 82, south of ditto, the lode is 3 ft. wide, worth 9s. per fm.; in the 72, south of ditto, the lode is 2 ft. wide, worth 10s. per fm. At the north mine, in the 55 end, north of Trehan's, there is not yet any alteration. We have resumed the driving the 50, south of Smith's shaft, where the lode is 2 ft. wide, worth 6s. per fm. In the 40, north of Smith's, the lode is 2 ft. wide, worth 7s. per fm. In the wine in the bottom of the 30, north of ditto, the lode is 2 ft. wide, worth 6s. per fm. Our stops are looking very fair.

**TRELEIGH CONSOLS.**—The 100, east of Garden's, no lode taken down this week. The 90, west of ditto, lode 18 in. wide, with good stones of ore. The 80, west of cross-cut, on the north part, lode 18 in. wide, worth 2s. 6d. per fm. The 70, west of Garden's, lode 18 in. wide, worth 2s. 6d. per fm. The 60, west of ditto, the engine-shaft, on driving further in the hill, we shall have good saving work. The appearance of the lode on the hill is also of a very favourable character—in fact, nothing can be finer than some of the gossan, which, perhaps, may contain silver; but I have not tested it. Altogether, I should say our prospects are very encouraging.

**WEST WHEAL JEWEL.**—The 85 fathom level, west of Williams's cross-course, on Wheal Jewel level, is unproductive—drove last month 2 fms. 4 ft. 6 in. The 70 fm. level, west of Williams's cross-course, on the same lode, is worth 4s. 10d. per fm.—drove last month 1 fm. 4 ft. 6 in. The 57 fm. level, west of Williams's cross-course, on the same lode, is unproductive—drove last month 1 fm. 5 ft. The rise in the 47 fm. level, west of Williams's cross-course, on same lode, producing stones of ore—rose last month 5 fms. 6 ft. 6 in. The 37 fm. level, west of Williams's cross-course, on same lode, is unproductive—drove last month 2 fms. 1 ft. The wine in the 70 fm. level, west of Williams's cross-course, on same lode, has not been taken down in the past week—sunk last month 1 fm. 3 ft. The 57 cross-cut, north of Buckingham's lode, on Hodges's cross-course, has been driven 1 fm. 2 ft. 6 in. The shallow adit slopes, west of Tregoning's shaft, on Tolcarne tin lode, are worth 7s. per fm.—stopped last month 3 fms. 2 ft. In the deep adit level, west of Tregoning's shaft, on same lode, the lode is unproductive—drove last month 1 fm. 1 ft. The 12 fm. level, west of Tregoning's shaft, on the same lode, is producing stones of tin—drove last month 3 ft. The following stops are working on tribute:—The stops east of Pryor's wine, in back of the 12 fm. level, are worth 20s. per fm.; the stops east of Tregoning's shaft, in the bottom of the 12 fm. level, on the same lode, are worth 25s. per fm.; the stops west of Tregoning's wine, in the bottom of the same level, on same lode, are worth 22s. per fm.

**WHEAL CREBOR.**—We are driving the end on Georgiana lode; the lode is about 2 ft. wide; we cannot say much about it yet, as we have been hindered a good deal in accompanying parties, who have been inspecting the mine. We ought to set more men in Crebor with little delay as possible; and the standard being so high, I have not the slightest doubt of making a considerable return soon after we commence.

**WHEAL LAWRENCE.**—Since we holed the shaft, we have been engaged in cutting plat and driving cross-cut, to bring the stuff from the south adit end to shaft, for hauling to surface. We are now driving west through the lode, which I find very large; we have already gone down 4 fms. We have seen a large stream of water coming from the end, which proves that the main part of the lode is still head of ore; this, I hope, we shall prove in the course of next week; the part of the lode we have driven through contains a quantity of Jack, munda, soft spar, &c.

**WHEAL PENHALE.**—Though but little has been done this week in the 30 fm. level, having had to engage the men at costoning work, and in making sundry alterations in the pitwork for sinking the new lift, yet there has been enough to show this level is not deteriorating in value; in and from the north end we are driving a cross-cut, for the purpose of intersecting the lode on which the wine in the 20 fm. level has partially been sunk—I consider we have about 9 ft. to drive, the ground is good; in the south end we are driving on a very good branch, about 1 1/2 ft. wide, which is making to the west, and in about 3 ft. will apparently fall in with the copper lode, when I expect the conjunction will develop a very good bunch of ore. A cross-cut, which will be remembered, has been driven south of the engine-shaft, from the copper to the lead lode, the latter being about 10 to 12 ft. east of the shaft; we are now driving north from this cross-cut in the lead lode behind the engine-shaft, and find it to be very good. I had anticipated, until lately, this lode came in connection with the copper lode about 3 fms. north of the shaft, but feel much pleasure in saying, that in the presence of a lode of such magnitude as the copper ore, I am fully convinced that the one behind the shaft is quite a distinct and parallel ore throughout. In the south end, in the 10 fm. level, the lode is now found to be very large and promising, but the lode in the wine north is poor. I have augmented the tribute department a little since my last, by increasing the pitches. This department continues much as last reported.

**WHEAL SARAH.**—We have cut a very fine lode east of the old mine in costoning, of a beautiful character—very fine gossan in it; but I cannot yet speak of its size, as it was only cut to-day; I shall better be able to report on it next week. This lode

is a great addition to the mine, being in a beautiful kilas, and no doubt will make plenty of lead, and, as I said before, this will be a rich lead mine. I think we can prove this lode some depth without the aid of any machinery, being on the top of the hill. The engineer has just left my house on his return home, and told me of the new discovery.

**WHEAL TREMAYNE.**—At Painter's shaft, the lode in the 80 fm. level west is from 1 ft. 6 in. to 3 ft. wide; it has a promising appearance, with stones of ore, not to value. In the 30 east, on caunter, the lode is 1 ft. wide—this is still unproductive. At Thomas's shaft, the 60 fm. level west is opening tribute ground. The 70 fm. level east is worth 3s. 6d. per fm.; the 70 west, ground rather hard, and lode small. At Laurie's shaft, the 30 fm. level west, on north lode, lode 1 ft. wide, opening tribute ground. At the new shaft, in the 53 fm. level, east on Allen's branch, the branch has been rather disordered by means of a cross-course. The 53, west of ditto, is worth 4s. 10d. per fm.; in the 53, west of engine-shaft, lode worth 3s. 6d. per fm. In the 45 fm. level, west of engine-shaft, lode worth 3s. 6d. per fm.; the men from both those ends are at present employed sinking and raising a wine, that a communication may be formed between the two levels, which is become necessary for the purpose of ventilation. The 45 fm. level, east on branch, is worth 5s. 10d. per fm. The boundary shaft has been sunk from surface 33 fms., and is holed to the workings above the 30 fm. level. The rise from the 45 is also communicated to the shaft sinking below the 35 fm. level. We have no alteration in the tribute department worthy of notice.

**WHEAL VINCENT.**—I have boxed up some very splendid stones of tin from the north lode, and have directed it to you at your office, according to your order. The stones that are wrapped in paper were broken from a leader on the north part of the lode, and which I expect is the same sort Mr. Murray means. The lode is still continuing good, equal to what it was when Mr. Murray saw it, but we consider it will much improve in driving towards the hill. I stated in my last report, that we had both stamps at work. You requested me to state what tin we have ready, and about getting ready for market. Now, sir, I cannot punctually answer that question. Tin mines are not like lead and copper mines, where you can make your calculation by judging from the size and quality of the lode in sight: not so with tin, as it generally runs in bunches—to-day it may be worth 50s. per fm., to-morrow not more than 10, or perhaps 5s.; and as we have not made ground laid open to any great depth, and the mine just in its infancy, we cannot state so correctly as though we had levels driven and ground divided in proper mine-like mode of working, which we shall ultimately do. However, I can state so far as this—that we are at present much more than paying cost; and, if the lode continues, we shall gradually increase our returns by the same outlay. I will be careful not to raise the expectations of the shareholders beyond the mark, but I think I may venture to say that I shall make good my former statements, as to the returns of tin by the end of March. I hope our wind-engine will be in working order in the course of a day or two; it is a new invention, and we must be cautious not to make more haste than good speed; but I am certain that it will make great saving to the mine. I hope, ere long, that Wheal Vincent will become a leading dividend-paying mine—in fact, it cannot fail, if the lode continues. March 7th.—The north lode is greatly improved, both in size and quality; driving east, it is now 3 ft. wide, with most splendid work; I broke, last evening, some very rich tin, from a branch dropping into the lode going east. The lode driving west is altogether 7 ft. wide, good work. We intend to try around our wind engine on Saturday. We are now taking down the south lode in different parts, which I shall fully detail in next week's report.

## FOREIGN MINES.

**COPIAPO MINES.**—The following is the mine report for November:—

**COPPER MINES—CHICO.**—In this mine we have had but few alterations in the past month. The 20 fm. level, east of Harman's shaft, continues to yield some very good ore, but the lode is narrower than when last reported on, being only 15 in. wide, but such changes in mining are of daily occurrence. In the 15 fm. level we have had a good lode, which still promises to continue for some time, and we have every reason to believe will improve; it is now about 20 in. wide, and of a superior quality. In the 40 fm. level the lode is large—say, 3 ft. wide—and producing some excellent ore, but still continues to be split into branches; should it become a little narrower, and the ore more concentrated, I have no doubt we shall find it to yield a good supply of rich ore for some time. The stops are yielding as well, or rather better, than I had expected; and, now, with an increased force, I hope shortly to have to report a corresponding produce.

**SAN PEDRO.**—I have very great pleasure in being able to inform you, that, since I addressed you last, we have had an improvement in this mine. In the 12 fm. level we have now a large lode 18 in. wide of very good ore, and as this is going into a large hill, of entirely new ground, we have great hopes that it will improve as we advance. A little to the south of the main lode we have discovered a branch of very superior ore—say, 10 in. to 1 ft. wide—and we hope, when we have brought it into a good state of working, to be enabled to increase the produce.

**LA COMPAÑIA.**—In my last report I informed you that I had sent tools, provisions, &c., &c., to commence the sinking of this mine with spirit, and I have now the pleasure of informing you that we have since set to work in good earnest, to sink a shaft on each of the two large lodes running through this set, and are breaking some excellent ore, but as we have not been able to dress or prepare it, I cannot report to you the quantity, but will do so in my next; this I can say, that there is every prospect of its becoming a very important mine.—Produce for Nov.: Chico, 40 tons; San Pedro, 14—54 tons.

**SILVER MINES—AT PIN HALLADA.**—On the 17th we commenced breaking down the lode in copper, or 5 ft. wide, at level 8, and 10 ft. wide, in the mine and examined it, and found the lode about 2 ft. wide, of ore that will produce at least 20 cwt. per cajon; we estimate the breaking down from this level will be about 6 cajons, or 18 tons. We have five other levels with silver in sight, and from the quality of the lode deduced, about 70 varas, we are expecting that, by the 10th proximo, we shall have not less than 60 tons broken and prepared for carrying to the amalgamation establishment. Valuable as the opinions are to the average quality, but it is a matter of such uncertainty, that I cannot myself at liberty to risk an opinion. I have no doubt of its being good.

**SAN JOSE DE LOS RIOS.**—In this mine we have had an improvement in this mine. In the 12 fm. level we have now a large lode 18 in. wide of very good ore, and as this is going into a large hill, of entirely new ground, we have great hopes that it will improve as we advance. A little to the south of the main lode we have discovered a branch of very superior ore—say, 10 in. to 1 ft. wide—and we hope, when we have brought it into a good state of working, to be enabled to increase the produce.

**CARMEN ALTO AND PLONIA.**—Of all the lodes that I have ever seen since I have been in Chili, I never beheld one that I admire more than the vein we have now in the 16 fm. level at level 16, and 10 ft. wide, and all the way down, we have an easy made of ore, and it produced 13 cwt. per cajon; but this, as you are aware, is but a little depth for a mine, but I expect to cut the lode in the shaft in about a month's fathoms deeper than the present level, where it will form a junction with another silver lode, and we hope, make a branch of rich ore. We are also driving an 8 fm. level on this lode north, into an immense hill, but the vein here does not look so pretty as in the 16 fm. level. I am daily more convinced that we must find riches in these mines, because the lode are of such a size and strength, and the ore gradually improving as we go down.

**LAZAR.**—We are driving into the 5 fm. level, in this level the lode is at present poor, having been disordered by a cross-course, and it will require our sinking a few varas to find it in a settled state again. The 2 tons of ore returned last month from this mine yielded about 100 cwt. per cajon.

**COLORADO.**—This mine has not been wrought with that spirit I could wish in the last month, on account of a want of labourers to carry out the stuff; we have, therefore, been sinking and driving with only one man in a level or wine, where we ought to have had two or three, particularly now, when we are more favoured by the weather, and such a one who holds out so much promise. I hope, however, that we shall be able to do more in the ensuing month, and that the results of our labour will be something good, for we have certainly every reason to hope for it.

**MERCEDITAS.**—In my last I informed you that I had received a letter from the captain of this mine, advising that an improvement had taken place. On my arrival there, I found that, after breaking out about half a ton of ore, the lode had become poor. I am happy, however, to inform you, that it is again improved, and, I think, now likely to be productive for some time. The lode is now about 1 ft. wide, and is giving some good ore, and I have great hopes that when we break it down again it will yield a good produce.

**TRANITO.**—We have sunk a shaft in this mine to about the depth of 30 fms. on the lode, which is still of a good width, but finding that there are several other veins nearly parallel, we have commenced driving a cross-cut to intersect them, with a view of ascertaining which is the most promising to sink deeper upon, and with a hope of finding some of the above, even at this level; we have confined our operations here to those for the present.

**GOLD MINES—ESPERANZA.**—I have before advised that we have two gold lodes, and one of silver, in this set, and in one of the former we are sinking a wine, which looks remarkably pretty; it is 3 ft. wide, and most of it ore that produces gold of low quality—still we have great hopes that the ore will soon improve. The silver lode is one of the prettiest I have seen, and, I think, cannot fail to make rich in depth.

**SANTO DOMINGO.**—I have not had any operations here to the driving of an adit level, but I have had the whole of the mine worked, and we have produced an establishment at Piquitos for the reducing of the gold ore of low or inferior quality; this adit will come in under our former workings, having more than 30 fms. of backs, and the lode it is now about 1 ft. wide, all of which will show visible gold when pulverised and washed.

**DESCUBRIDORA.**—I am fully persuaded that if we had the management of this mine we could make good returns, but as the company's share is small, and I have hitherto had so much to attend to, I have avoided doing so; however, in my last trip I inspected it with Capt. Lawrence, and find that there is a great deal of ore, of fair quality, to be taken out. The beautiful lodes to drive and sink, and the great quantity of hands and very high price of carriage seems to deter the owners from prosecuting it with vigour; but with the little that is being done, they are taking out some ore that will yield about 20 to 30 cwt. of gold per cajon, and are about having several tons amalgamated.

The following is copy of a letter which has been received from Captain Nancarrow:—**Copipo, Dec. 29.**—In now, for the first time, address you relative to the mines belonging to the Copipo Mining Company. Here I would beg to observe, that on this occasion, owing to my recent arrival, I shall not give you a detailed report, but merely a few cursory remarks on the mines generally.

**SAN PEDRO COPPER MINE.**—This mine I have inspected twice; and though there is not a great quantity of ore ground standing, yet I am much pleased with the appearance of the lode in the 10 fm. level, which is 18 in. wide, and producing 3 tons of ore per fathom. I am also pleased with a lode standing to the south, formerly worked to a great disadvantage by the native miners. To work this lode effectively, I recommend your driving a cross-cut from the foot of the hill, which will intersect it several fathoms below the old workings, and where, I have no doubt, it will give good returns.

**LA COMPAÑIA COPPER MINE.**—This mine I consider to be a good speculation; and from the appearance of the lodes now being wrought on, I have no hesitation in saying I think it will be a lasting and permanently good mine. I have inspected the whole of the mine, and from inferences drawn by comparing one mine with another, and looking at the strata, in which rich bunches of ore have been found, I confidently think the company's interest here to be of a first-rate character. A more detailed report you may expect next month.

**LINEARES MINES.**—The following has been received from Mr. H. Thomas:—**Lineares, Feb. 24.**—We have commenced to sink under the 30 fm. level in the San Gaspar wine, the connections being all completed at 12 o'clock last night, and all is going on well; as the coming stream was kept in by the engine at five strokes a minute, I hope our progress will be rapid at the increased rate of 12. The tribute pitches are just as when I last wrote, except Fault's, which is improved, and in one of the lodes, worth 4 tons per fm. We hope to resume drawing this week, and to dress up February ore as quickly as possible. We have set the eastern shaft to sink at 220 fms. (about 50s. per fm.), and re-set the San Juan at 150 fms. or 62s. per fm., and as soon as practicable, we purpose cutting a plat in the bottom of the wine-shaft, and commence sinking under the 30.

**P.S.**—Fearing that the former assays were subject to error, from a failure in the crucible, I have re-assayed the ore, and find that the fibrous ore will produce 74 per cent. for lead, and the sticky ore 72 per cent. I have made a larger assay of other samples of the fibrous ore; but as it is not unlikely to contain some antimony, I do not like to estimate

it too highly. I trust we shall be able to dress these ores to 75 per cent., and, by due classification, secure 17 per ton more than for ores without silver.

**Lineares, Feb. 27.**—I have to acknowledge the receipt of your welcome letter, directing the shipment of the first parcel of Lineares ore, the arrangements for which shall receive every attention. We have the claim again at work, and as soon as we have got up the poppet heads over our new wine-shaft, that communicates with the Calaveras wine, and which we are about to sink under the 30 fm. level, we shall be able to spare the English carpenter to assist about the coopers, and get our dressing operations more forward. The engine is working at nine strokes a minute, and we have forked the water in San Gaspar wine under the 30 fm. level 8 ft.

## NORTH WHEAL FRIENDSHIP MINING COMPANY.

A general meeting of adventurers was held, at Tavistock, on Thursday, the 21st February.

A statement of accounts for Nov., Dec., and Jan., was presented, showing—Balance from last account, 325s. 13s. 1d.; sale of lead ores, 137s. 5s. 3d.—462s. 18s. 6d.—To mine costs, 325s. 13s. 1d.; dues, 102s. 4s. 8d.—showing balance due to adventurers, 126s. 17s. 9d.; but, to pay off charges for the several leases, and further operations, a call of 10s. per share was made.

The following report, from Capt. A. Barratt, was read to the meeting:—

**Feb. 26.**—Since the last meeting of adventurers, the 30 fm. level, west of Buller's engine-shaft, has been driven about 30 fms. on a large lode, containing great quantities of munda, and now and then showing a little lead ore. The end is now in from the said shaft about 36 fms., the lode in the present end being comparatively small, and, for the most part, an intermixture of flookan and munda. The 30 fm. level east has also been driven about 14 fms., and is now 22 fms. from the said shaft. A little copper ore has been seen at various points in the course of driving the last 10 fms. I believe we must not expect any very favourable change in the character and quality of the lode at the present depth, judging from the unsettled nature and general composition of the stratum; and, therefore, I would recommend the sinking of the engine-shaft, with a view to a deeper trial. At Wheal Betsey, the rise in the deep adit level, about 20 fms. north of Matthew's shaft, has been continued, and some lead ore ground has been met with, a good branch of lead being now in the present back; and, from the dalling, it rather appears to be standing to the west of the old workings above, in which case some auxiliary returns will be derivable from this part of the concern. From the rise in the back of the same level, about 9 fms. south of Matthew's shaft, a level has been driven north therefrom 6 fms. in the present end, of which we have a good branch of lead, the back and bottom of which level is now in operation on tribute, at 6s. 8d. in 17, and yielding some fairly remunerative returns. There are working some other pitches in the old mine, but not likely to do much more than pay their way. We have now on the mine being a good lead ore, which is in course of dressing, and will be ready for sale, probably, by the end of next month. The ore ground in the mine has been more extensively laid open, and rendered susceptible of working by more hands, our monthly returns will be increased.

## SOUTH WHEAL JOSIAH MINING COMPANY.

At a meeting of adventurers, held at the Queen's Head Inn, Tavistock, on the 27th of Feb., the accounts were produced, showing balance in favour of adventurers (supposing all calls paid) of 98s. 5s. 11d.

The following report, from Capt. John Hamblin, was read to the meeting:—

**Feb. 27.**—In laying before the meeting my report of this mine, I would notice, that since we commenced working on the Wheal Jack Thomas lode, we have driven west on the course of the same altogether about 65 fms., the greater part of which (the lode) has been large and promising, producing occasional stones of ore, but with the exception of about 4 fms., in which we had a good ore lode, the remainder has only been of a promising character; from this circumstance we may expect to have ore at a deeper level. About 3 fathoms behind the present end we have commenced sinking a wine, and are down about 5 fms.; the lode is about 2 feet wide, producing munda and stones of ore; but the nature of the ground or strata in which the lode is embedded, is such as cannot fail to produce mineral; the clay-slate about the lode is precisely of the same nature and character as that of Maria Mine adjoining; therefore, I think we may still hope, as we drive on towards the cross-courses before us, to have a good mine; and I think we ought also, at the same time, to be searching and opening on the south lodes, which are now so productive at the Bedford and Hawkmoor Mines, adjoining the east; Heiginston Mine also being so rich, shows that we are surrounded by rich mines, and are sure to have one here.

One man is to be put to costean the south lodes, and a meeting is to be held on the 3d April, to forfeit all shares which may then be in arrear.

## WHEAL ANDERTON MINING COMPANY.

The following report, from Capt. Carpenter, was read at the meeting of adventurers held at Plymouth, on the 20th February, the particulars of which were given in last week's Journal:—

**Feb. 28.**—Herewith I beg to hand you a report of the mine, by Capt. Paul and Lear, of Wheal Franco, and Capt. Eddy, of Wheal Yolund Mine. The section submitted, showing the ground worked away for ore, and further development of the lode from the discovery made in the engine-shaft, 4 fms. under the 50 fm. level, will give an idea of the general workings.

First, the engine-shaft has been sunk to the depth of 30 fms. In the 90 fm. level it was thought expedient to drive north to cut the lode, which was effected by cross-cutting 12 fms. The lode being disordered at the point of intersection, the lode was driven west on its course 13 fms., to be so far west as to be opposite the old engine-shaft, where the lode showed very good indications of improvement at greater depth; therefore we continued driving west 50 fms. further, by cutting right and left, as occasion required, to ascertain, if possible, the most prudent steps to pursue before we felt justified in advancing a larger capital; however, the indications were such as to warrant the sinking of the engine-shaft to 40, and see the lode by cross-cutting, which object was carried into effect. At this level, we have a lode 3 ft. wide, with a branch of tin ore, and a lode 50 fms., a decided improvement in the character of the lode was apparent, both in size and properties, producing tin and copper ores—about 3 tons of the latter, and 1 1/2 of the former—and a fair conclusion might be drawn that something good was reasonably to be expected from the further development of the lode. The same level has been driven 24 fms. east of the shaft, where it is disordered at intervals by small alides (flookan dividing the lode); however, from its general appearance it promises to be better in depth. It was not until then we saw a fair chance of being remunerated for the purchase of a steam-engine to prosecute the mine vigorously, and a 30-in. cylinder steam-engine having been erected, with the view of putting down the shaft and proving the lodes. The shaft being sunk to the 50 fm. level, the lode was cut in driving 12 feet; this diversion, apparently in the distance of cross-cuts from the 40 to the 50, was occasioned by a heavy bed of alides in the shaft, where it is disordered at intervals by small alides (flookan dividing the lode); however, from its general appearance it promises to be better in depth. It was not until then we saw a fair chance of being remunerated for the purchase of a steam-engine to prosecute the mine vigorously, and a 30-in. cylinder steam-engine having been erected, with the view of putting down the shaft and proving the lodes. The shaft being sunk to the 50 fm. level, the lode was cut in driving 12 feet; this diversion, apparently in the distance of cross-cuts from the 40 to the 50, was occasioned by a heavy bed of alides in the shaft, where it is disordered at intervals by small alides (flookan dividing the lode); however, from its general appearance it promises to be better in depth. It was not until then we saw a fair chance of being remunerated for the purchase of a steam-engine to prosecute the mine vigorously, and a 30-in. cylinder steam-engine having been erected, with the view of putting down the shaft and proving the lodes. The shaft being sunk to the 50 fm. level, the lode was cut in driving 12 feet; this diversion, apparently in the distance of cross-cuts from the 40 to the 50, was occasioned by a heavy bed of alides in the shaft, where it is disordered at intervals by small alides (flookan dividing the lode); however, from its general appearance it promises to be better in depth. It was not until then we saw a fair chance of being remunerated for the purchase of a steam-engine to prosecute the mine vigorously, and a 30-in. cylinder steam-engine having been erected, with the view of putting down the shaft and proving the lodes. The shaft being sunk to the 50 fm. level, the lode was cut in driving 12 feet; this diversion, apparently in the distance of cross-cuts from the 40 to the 50, was occasioned by a heavy bed of alides in the shaft, where it is disordered at intervals by small alides (flookan dividing the



## THE GOLD WASHING DISTRICTS—No. II.

BY E. HOPKINS, C.E., F.G.S.

The strange accounts sent to, and circulated by, the public papers, with respect to the supposed origin of the gold in California, and also the lectures given by scientific men on the same subject, endeavouring to prove the igneous origin of the gold-bearing rocks, and that the precious metal was thrown up at some imaginary epoch in geological time, clearly show that the formations of metals, mineral veins, streams, deposits, &c., are little understood. In some of the more recent letters received from the "diggers," we are informed that the geologists who had arrived there, were more at a loss in judging, and looking out for the rich places, than the ordinary washers; indeed, it is said, that they and their "geological manuals," "guide to gold seekers," &c., make but a sad affair of it. How can we expect it otherwise? Those who wish to study such subjects, with the view of rendering geological knowledge really useful, must study the true character of rocks and minerals, *in situ*, and learn to separate geology founded on assumption, from geology founded on natural laws, otherwise their geological knowledge will be worse than useless, as seen in California. I have stated, in previous papers, that gold and other metals and minerals are often found disseminated in the primary rocks—i.e., in the granites, porphyries, and their oxidizing crusts—such as clay slate, or ferruginous silicate of alumina. In the *hard compact* crystalline rocks the gold is never found in grains; it is only detected in a very minute or aqueous state of saturation by analysis, or by very fine grinding and most careful washing; but after the change of the crystalline into the clay-slate, the gold becomes granular, and is deposited in flakes, crystals, &c., in the cleavage and fractures of the rock. In Gongo Soco the gold is found in the jacotinga formation (ferruginous clay-slate), in some parts sufficiently rich to quarry the rock to obtain the gold disseminated therein. The same has been observed at Morro Velho. The clay-slate in which the lode is formed is often found to contain from 1 to 1½ oits of gold per ton, and where this rock is fractured, rich veins of gold are necessarily formed. I have seen many similar rocks in New Granada and other places, producing gold by daily decomposition. The stanniferous granites of Cornwall present similar instances, the oxide of tin forming a component part of the granitic masses, and when such rocks decompose, they necessarily cause rich mineral deposits in the bordering ravines.

It is well known that the largest proportion of gold is obtained from rivers and superficial deposits, in granitic districts. The quantity extracted from veins is comparatively small, less pure, and depreciating both in quality and amount at moderate depths. Gold is always found in its metallic state, almost pure in alluvial deposits, but more or less alloyed when found in veins with minerals. There are no ores of gold, as often very improperly stated. This metal is never found mineralised in Nature; but inclosed commonly in iron pyrites, and frequently alloyed with other metals. The gold-producing rocks are not confined to particular geographical zones, as formerly supposed, but are found protruding, more or less, in all countries where the primary series is visible.

All the ferruginous and friable granites, containing yellow mica and pale yellow quartz, which are subject to disintegrate into spherical exfoliation, produce gold during the change. The auriferous granites of the Pacific coast, as well as those situated in the interior of South America, show this effect in a very striking manner. The internal crystalline character of this rock changes as it approaches the surface, by an almost imperceptible gradation, into a kind of globular structure, like a coarse conglomerate. During this superficial process of decomposition, black ferruginous mineral is formed, and in which the greater portion of the gold contained in the rock becomes crystallised into grains of various sizes, depending on the richness of the rock, and other circumstances, favourable for crystallisation or deposition. This loose oxidated surface of the auriferous granites is washed down by rains, and thus forming the gold washing deposit. Those of California are precisely similar; and the quantity will depend on the amount of the above deposited at the foot of the ridges and the valleys. Although veins of auriferous quartz, and sometimes pyrites, are often found in such rocks, yet they cannot be compared in value with the rich superficial production.

## PRODUCTION OF THE PRECIOUS METALS IN RUSSIA.

[The following are extracts from the Report of the Austrian Commissioners on the Exhibition which took place last year in St. Petersburg.]

**From the Crown Mines of the Ural.** The mines are situated principally in the Ural and Altai mountains, and the lower range of hills which surround Nertschinsk, in Siberia.

**GOLD.**—This is always an interesting topic, but doubly so at the present moment, and we shall, therefore, quote the report of the Austrian commissioners respecting it rather fully. The mines in which gold is found belong partly to the imperial domains, and partly to private individuals; they are found in the largest numbers in the neighbourhood of Katherinenburg, in the government of Perm, which is the seat of the superior administration of all the mines of Perm and Siberia. Gold washings exist in the district of Werthechourie, in the government of Perm. Large quantities of gold are also found in Eastern Siberia; the first discovery of its existence was made in 1829. The mines on the Ural were not worked until 1814, and those on the Altai not before 1830. The gold found in the sand is of various forms and weights—pieces weighing 15 and even 24 pounds have been discovered; but the shape in which it is chiefly found is a fine sand. The mines in Siberia can only be worked during four months; and the gold hunters are compelled to obtain a license from the Minister of Finance. The Crown has a royalty of from 20 to 24 per cent. on all gold found, and every pound of gold pays four roubles for police and other purposes. The import and export of gold in all shapes is duty free. It cannot, however, be exported from the western frontier of the empire. The annual publication of the St. Petersburg Academy, for the year 1849, contains the official returns of the total amount of gold obtained in the year 1847. The following table refers only to the mines on the Ural, which, it will be seen, are by no means so productive as the mines in Siberia:—

From the Crown Mines on the Ural.	
Katherinenburg .....	(Poods) 35
Sisaton .....	48
Bogodolovsk .....	34
Gowbiagodat .....	10—127.
From Private Mines.	
Werch Issetsk .....	(Poods) 48
Kastinsk Kaschtinsk .....	13
Nische-Tagilsk .....	28
Sysert .....	27
Newianak .....	19
Schaltansk .....	6
Bilimbajewsk .....	2
Krestowodsk .....	18
Wsewolodsk .....	6
Werchne Ufailek .....	2
Itabansk .....	10
Other Mines .....	18—196.

Siberia produced in the same year the enormous quantity of 1456 poods. In the previous year the produce was 1677 poods.

**PLATINA** is found in the Ural mountains; the mines being worked by the Government and by private persons. The quantity produced annually has decreased very much of late years; in 1833 it averaged about 40 poods, while in 1847 it did not amount to 2, and in the following year only very little more. The present price is about 3600 silver roubles per pood. The exportation of this article is entirely free; manufactured platina is subject to an *ad valorem* duty of 25 per cent. France is the chief recipient of the platina exported from Russia.

**SILVER** is found in the Altai and Nertschinsk mountains. The latter produce on an average about 207 poods annually. Some silver mines exist also in the Ural Mountains, but were only discovered in 1834. It may be imported and exported duty free, with the exception of exportation on the western land frontier. The total quantity of silver produced in 1846 was 1191 poods.

The various articles manufactured from the precious metals are described as of high finish and great elegance. The silver articles were more particularly remarkable. This branch of industry is a very ancient one in Russia, and is principally distinguished for the remarkably fine silver chains, which are manufactured in large quantities in Ustug Welaki, a town in the government of Wologda. These chains are not thicker than an ordinary thread, and are worn by the lower orders to suspend their crosses on. They are principally made by women. Gold and silver articles pay an *ad valorem* import duty of 35 per cent. The plated articles exhibited were held by the Austrian commissioners to be a convincing proof that Russian industry has rendered Russia independent of the foreigner in this branch.

**VARIOUS METALLIC ARTICLES.**—The manufacture of articles from sheet copper, brass, and tin has reached a high degree of eminence; the lamps, spoons, forks, &c., exhibited were very good specimens. The commissioners seem to have been much struck with the Russian tea-urns, which are very similar to the old-fashioned English ones. The lacquered wares are very favourably noticed, with the exception of the artistic designs, which are described as tasteless and coarse.

**MACHINERY.**—Machines for cotton and flax spinning, and for cloth factories,

are principally imported from England, the importation is duty free. The value (in silver roubles) of the machines imported was, in—  
 1842. 1843. 1844. 1845. 1846. 1847.  
 517,508 975,396 1,315,092 1,630,525 1,918,072 1,884,947.  
 There are several large factories in full operation in Moscow, which produce very creditable locomotives and fixed engines. Iron steamers have also been built, which have been very favourably reported on. The smaller kinds of machinery are made in great perfection, and the mechanics employed are, in this instance, chiefly Russians. The value of the machinery made in Moscow, during the year 1848, amounted to 106,000 silver roubles, hardly a tenth of the value of the quantity imported.

## KILBRICKEN MINING COMPANY—WINDING-UP.

The second meeting, for the purpose of winding-up this company, was held before the Master Richards, by appointment, on Wednesday. Mr. Wright, the official manager, attended, with Mr. Rogers as counsel, for the purpose of taking the evidence of Mr. Henry Crookford, the petitioner for the winding-up; and he was attended by his agent, Mr. Larmon, who handed in a document, purporting to be a history of the rise, progress, decline, and fall of the company, as made by Mr. Crookford, and which he now wished to have placed on the file of the proceedings of this court in his affidavit.

Mr. Rogers read the document, which was very lengthy. After giving an account of the mode in which Mr. Crookford had become connected with the company (which we published in our last in his petition), it went on to state, that after two calls had been made, the directors found they had no power to enforce them—that before the sale of the assets of the company their value had been estimated at 2560l. 10s., but the auctioneer, who had been subsequently consulted, said the materials had been overvalued, and that they would not sell for that sum; that petitioner then purchased them for 2270l., because he had heard that a new company for working the mine was about to be formed. However, only two individuals had come forward for that purpose, and now there was nothing doing at the mine, and he feared he would lose 1000l. by the machinery. He (Mr. Rogers) said that Mr. Crookford could not put that document on the file as an affidavit, but he might hand it in as his statement, upon which he (Mr. Rogers) now proposed to ask him some questions. He would also contend that Mr. Crookford still held 650 shares in the company, and that he could not get credit for any which he might consider he had transferred.

Mr. Crookford then, in answer to questions from Mr. Rogers, said—I am the owner of the mines, machinery, and materials now, except about 170 tons of a material called "black jack," and about 40l. worth of coal. I bought the interest in the lease of the mine, and it was ordered the auction—least, I did so by the authority of the directors, because a meeting had been held, at which the shareholders agreed that the company should be wound up, and they authorised me to do so. Two meetings were held—one on the 6th, and the other on the 23d July, 1848, at which the resolutions were adopted, ordering the winding-up and sale. (Here the resolutions were read.) I consider I was acting by the authority of those resolutions in calling the auction, and effecting the sale of the machinery, &c. I consider myself now the owner of the mine, and the whole of the machinery; I paid the purchase money (2270l.) at the sale to different parties. I paid the auctioneer 450l., and I also paid the money due to the London and Westminster Bank, except a sum which they have transferred to my private account. I consider I acted under the authority of the resolutions in calling the auction, and that I am now the owner of the lease, and all the property under the purchase.

THE SECRETARY to the company here stated that the auctioneer advanced 480l.—that was to say, 30l. more than he had received, as all the works had been stopped, and the workmen were all starving.

Mr. Crookford, in answer to further questions from Mr. Rogers, said that he had given a bill to his banker for 560l., which was paid, so far as the company was concerned. He paid 160l. of it, and the remainder was placed to the debit of his own private account. The bill was taken by the bank in payment of their claim against the company.

Mr. ROGERS: Well, but then I see by the bank-book that the bill you speak of was a bill discounted by the bank; how do you explain that?—Mr. Crookford (after looking at the bank-book account) said he could not explain it. Mr. ROGERS: But here is the bill-book of the company, and by that it appears that this bill was a bill payable by the company.

Mr. Crookford (looking at the bill-book): It would appear so.

Mr. ROGERS: You take credit in your account for 561l. 8s. 6d., but the bill is for only 516l., which makes a difference of 45l.; how do you explain that?—Mr. Crookford: The difference of 45l. was a sum paid to me by two gentlemen, who were to form the new company; but I am going to pay that sum back, as the new company was not formed. I think there must have been an error in the payment of those two sums into the bank to the company's account; they should have been paid to my private account.

Mr. ROGERS: What do you consider the value of the property now to be?—Mr. Crookford: I think it is a very unealeable property; but I consider the machinery, &c., are worth the money I gave for them, yet I could get it—I say that because the mine is in Ireland; it is more unealeable than mining property in general. I may say I nominally got 6500l. for half the mine, but I paid back 3000l. as capital to carry on the works; that money has been spent upon the mine.

Mr. ROGERS: Was the lease put up at the auction?—Mr. Crookford: Yes; everything was put up at first, but as there was no bidding, the lease and the steam-engine, and the machinery under water, were next put up in one lot, and I bid 550l. for them. I have since tried to sell the steam-engine for 700l.; I purchased it originally for the use of the company for 800l., and the freight amounted to about 140l. more. The machinery under water would be worth about 200l. if it could be got out, but I do not think it likely it ever can be got out. I was the original projector of the mine; I was living in the country, and I thought it a valuable property. It was got up in this way:—My brother communicated with me, and he communicated with Mr. Evans, and the company was started, and I agreed to it, if I could get my terms. Mr. Evans was to get 100 free shares, and my brother 50 free shares; the prospectus was sent me, and I approved of it. I have no doubt the printed prospectus now before me is the same as that I approved of, but that copied into the book is not the same.—It being now four o'clock, the inquiry was adjourned.

**WINDING-UP OF RAILWAYS AND JOINT-STOCK COMPANIES.**—It is rumoured that a new Master in Chancery will be appointed to meet the increasing amount of cases under the Winding-up Act. There are now upwards of 100 in operation, being at the rate of 10 to each Master, and they are found to impede very much the progress of many private suits.

**CHEPSTOW, FOREST OF DEAN, AND BLOUDESTON.**—On Friday the winding-up of this company's affairs came on before Master Kindersley. All the shares, to the extent of 30,000, were allotted; and 65,000l. was received from the shareholders, on account of deposit, by the managing committee, consisting of Sir W. Tyvaden, Sir W. Johnson, Alderman Hughes, Major White, and Messrs. E. F. Dayrell, G. Lawton, E. Hall, W. P. Andrew, C. E. Coleman, W. S. Fitzwilliam, J. Morrison, and W. F. Beadon. Surveys were made, and expenses were incurred; the undertaking was subsequently dissolved, and 28s. per share returned out of the deposit of 2l. 2s.; but no account of receipts and payments was rendered. The secretary represented at this period that there was 12,000l. more in hand, that the accounts would be made up, and a further return made; but this was not done. The petitioners further represent that the proportion of deposits retained for expenses was 22,000l.; though the line was only 28 miles. Some time after the provisional committee projected another line, called the Welsh South Midland, and petitioners allege that the whole of the expenses of the new scheme were paid out of the funds of the Chepstow and Forest of Dean Company, and they have reason to believe that 11,000l. out of the 22,000l. before-mentioned was, without the knowledge or consent of the shareholders, appropriated for this particular purpose. Notwithstanding the retention of this large sum, there are debts still undischarged, and the petitioners pray for inquiry into this misapplication of the funds, regarding which no explanations have been given by the solicitors or committee of management.

**DIRECT WEST-END AND CROYDON RAILWAY.**—On Wednesday last Master Tinney proceeded with the settlement of class I of contributories to this undertaking, consisting of 100 provisional committeemen, three of whom, Major Beresford, Dr. Anderson, and Mr. Underwood, were summoned and examined. Major Beresford, to save the time of the Court, and the expense of a tedious examination, admitted his liability as a member of the provisional committee. Dr. Anderson urged that he had no recollection of having been a member of the provisional committee, until a letter in the Doctor's own handwriting was produced, written in 1845, and addressed to the members of that body, expressing an anxiety to have the week-day meeting of the board altered to suit his professional engagements.

**ISLE OF AXHOLM, GAINSBOROUGH, AND GOOLE RAILWAY.**—The settlement of the list of shareholders came on before Master Sir W. Horne, on Tuesday. Counsel appeared for Mr. Hudson, who was chairman of the company, and for the York and North Midland Railway Company, who were to subscribe one-fourth of the capital, and stated that that company had not been able to produce their books, ordered by the Master in that occasion, but would do so on the next. A sum of 26,250l. was paid in respect of the 2l. 2s. deposit, which was returned, deducting 10s. 6d. per share, but the petitioning shareholders state that there is a large amount of outstanding liabilities.

**TWENTY CURENS ON THE LEGS CURVED BY HOLLOWAY'S OINTMENT AND PILLS.**—Extract of a letter from Mr. O. B. Knicker, dated Mount Gambia, South Australia, July 7, 1849:—"To Professor Holloway, Sir,—A cure has just come under my observation, in which the efficacy of your ointment and pills has been fully proved. A man of the name of Joshua Smith had upwards of 20 cures on his shins, which were so difficult to cure, that almost every remedy had been applied without any good effect. Your pills and ointment were then resorted to, and in about six weeks he was completely cured, and scarcely a mark is to be seen."—Sold by all druggists; and at Professor Holloway's establishment, 344, Strand, London.

## Mining Correspondence.

## BRITISH MINES.

**ALFRED CONSOLS.**—Field's engine-shaft is sunk to the 70 fm. level; the shaftmen are making preparations for driving east and west at this level. The lode in the 60 fm. level west is 8 ft. wide, and on the north part is a branch 6 to 8 in. wide, yielding copper ore of good quality; the lode here has a much better appearance than for some time past; the lode in the 60 fm. level, east of the engine-shaft, is from 4 to 5 feet wide, and the course of copper ore on the north part will yield 4 tons per fm., and worth from 20 to 30l. per fm.; the copper is extending east quite to our expectations. We have commenced sinking a winze under the 60, east of the engine-shaft; lode 3 ft. wide—the course of ore on the north part is 2 to 3 ft. wide, and worth 30l. per fm. The 30 fm. level east is suspended for the week.

**BARRISTOWN.**—We have intersected in the 80 fm. level west end a lode taking a westerly course, and running nearly at right angles with the new lode we were driving on; it is about 10 inches wide, with a south underlay, and for the greater part of 2 fms. which we have driven on its course, there has been a branch of lead, sometimes 3 in. wide, and at other times not more than 1 in. wide, besides a slight mixture of lead through the lode. We have done but little in the 30 fathom level west end, on new lode, since my last, but shall now resume driving it; in the 20 fm. level east the lode is still stopping on tribble, is much the same as last reported. We are about about 7 fms. in the lode shaft under the 30 fm. level, and have commenced to sink a winze on the course of the lode in the bottom of the 30 fm. level.

**BEDFORD UNITED.**—The summen have been employed during the last month in dividing and casing the shaft down to the 115 fm. level, and in cutting ground for plat, &c. The whole of this preparatory work will soon be completed, and the sinking of the shaft resumed. In the 105 fm. level, the driving from the shaft eastward, and from Burley's winze westward, is holed, and the men are now set to complete the tram-road home to this end, east of Burley's winze; as soon as this work is completed, they will commence rising against Crew's winze, in which the water is still too quick to permit of its being raised deeper. In the 105 fm. level, east of Burley's winze, the end has been carried a little north of east, in order to prove the size and character of the whole of the lodes. In the present end there is a lode 2 ft. wide, very good work, and likely to be much better in a few days. The north wall of the lode is not yet reached, and we shall, therefore, continue the driving on its present bearing. The lode in the 90 end east is 20 in. wide, good saving work, and leaves better tribute ground than we expected. In the 70 fm. level the end has been extended, for the last 7 or 8 fms. by the side of the lode; we are now cutting into it, and shall be able to report on it next week. In the 47 fm. level the cross-cut north is progressing favourably, in a good clean kilias, with a few indications of mineral, in small branches, crossing the driving. The pitchea are yielding a full average quantity of ore, and we have sufficient broken for our next sampling. The ore sold in Feb. weighed 114 tons 3 cwt., and the parcel sampled is computed at 119 tons, which will be sold on the 21st inst.

**BODMIN CONSOLS.**—The wheel is nearly completed; we shall now get on fast with our surface work, and I hope to be sinking in a fortnight. The lode in the south adit continues to improve, both in size and quality, with large stones of lead; the ground is soft for driving, and set at 15s. per fm.—nothing can look better. Since writing the above, Hooper, one of our tributers, has just sent in from the same end one of the best specimens of arseniate and carbonate of lead I ever saw.

**BRYN-ARIAN.**—The 10 fm. level, driving west from the engine-shaft, is much improved within the last three or four days; the lode is 4 ft. wide, with a good mixture of ore. The 10 fm. level east is rather improved—a little more ore than last week. We set the engine-shaft to sink under the 10 fm. level on Saturday, by the men, to be carried 10 ft., and 6 ft. wide, the men to pay for drawing all their stuff to the adit level, at 10l. 10s. per fm. The two stops east and west of the winze, east of the engine-shaft, are the same as last reported, each yielding about 15 cwt. of ore per fm. The lode in the adit level east is very large, and spotted with ore; the lode in the shaft, sinking under the shallow adit level, is 6 ft. wide—much the same as last reported. We hope to sample 20 tons of ore the beginning of next week.

**CARADON VALE.**—Mr. Robert Dunstan writes (Feb. 26)—Agreeably with your request, I have inspected the above mine, and report as follows:—A cross-cut adit has been driven northward from its mouth 50 fms., where a very promising lode is cut, averaging from 1 to 2 and 3 ft. wide; it is composed of gossan, apatite, peat, horn pyrites, with shales of carbonate of copper, located in a beautiful kilias strata, at a little distance from the granite range of Caradon, and is bounded on the north by Torkenbury, and on the south by South Caradon Mines. The lode is one of great promise, and its situation most favourable; and, on the whole, I judge this adventure to be every way worthy the attention of mining capitalists.

**CARTHEW CONSOLS.**—At the upper mine, in consequence of the summen having had to put down the sinking lift, and additional pieces of main rods (which are now complete), to enable them to prosecute the sinking to the 75 fm. level, the engine has been idle for the greater part of this week, which has caused the suspension of the ends in the 65 fm. level for a considerable portion of the time since my last; therefore, I can report nothing new at all in the tributer department. I have made up great increases as practicable in the tribute department this week, by augmenting and increasing the pitchea; this department looks better than at any former period. The foundation stone of the steam-whin and crusher house will be laid early in the coming week. At the lower mine, the lode in the adit end south verges fast to the west, and the end is very wet; and I am led to suppose we are nearly approaching the upper mine lodes.

**CEFN GWYN.**—Last month I took the men back from the end driving east—finding the lode poor, and put them to sink the old winze, which is in about 5 fms. from the cross-cut; we find the lode increases in size and quality in sinking; we are carrying from 3 to 6 ft. wide and 7 ft. long, and one branch good for 4 inches wide—the whole is saved for dressing; there are 6 men sinking this winze, having removed two from the western end. The lode in the level driving west is still large, with spots of lead ore, but nothing to save.

**COURT GRANGE.**—Last Saturday was our setting at the Court Grange Mines. We set the Pen-y-Cefn engine-shaft to sink 10 fms. for 90l., and the Llettyphen shaft to sink 10 fms. for 80l., but have arranged our underground bargains so that the cost will not be increased in doing this work. Our drawing machine we expect to get to work very shortly; and I am glad to say our bargains underground are turning out a good quantity of ore, rather more than I anticipated they would have done, and are at present looking quite as well as they have ever done. The end east in the 30 fm. level is much improved, and drained all the ground from the 16 fm. level to the bottom; the lode at present is not rich, but from the ground seen in the 16 fm. level, we may reasonably expect a good course of ore before us. Our dressing is proceeding satisfactorily, but we shall have to enlarge our slime flooring, but the expense of this will not be great. At Llettyphen we have commenced dressing, and shall shortly get some ore clean. I have very carefully gone into the state of our affairs, and my opinion is, that from this time hence, our accounts will stand the right side of the book—from 50l. to 70l. a month to come, with, and that this will be increased as soon as the shaft is sunk to the 40 fm. level, and the lode laid open a few fathoms. We are now sampling about 15 tons of ore from Pen-y-Cefn, and about 5 tons from Llettyphen, which will more than meet the cost this month.

**CRADDOCK MOOR.**—The shaft is now between 12 and 13 fms. deep from surface, and the walls of the cross-course still retain their vertical direction. The ground in the shaft is at present harder than it has been—I expect, in consequence of its coming near Dunstan's lode, which will be in the shaft in 3 or 4 fms. more. We have some veins in the shaft, with spots of copper ore in them. The shaft is now very deep for drawing the stuff by manual labour; and, as the days are getting longer, I would recommend that the engine be removed as soon as the weather gets a little settled; and then, in addition to drawing the water, we shall be able to draw the stuff with the same machine, and at the same expense.—[The particulars of November and December account meeting appeared in last week's Journal.]

**DAREN.**—Feb. 28.—We are now building the wheel-pit, and we hope in about six weeks, if we get the crusher, that we shall begin to dress ore. The ore-ground throughout the mine is of the most healthy character, and I am fully impressed with the certainty that we shall soon be realizing a good profit; in fact, all along the face of the hill, the line of the lode is covered with large heaps of copper and silver-lad ore, and in the old open cuttings (which we are clearing out) we are finding a number of stone-hammers, the relics of a far bygone age, probably belonging to the earlier stages of the history of metals, if not the very earliest. At the foot of the hill, which in this place is about 600 feet high, we are erecting our crushing-mill and dressing apparatus, bringing modern appliances to bear upon what was the site of the labours of a ruder age, as the stuff may be thrown into the crushing-mill from the place where the old stone-hammers are found, showing the earliest and latest ages of man have had the same object in view; most probably the Daren vein was then worked for copper, as the ore of this metal is here found peculiarly solid, yielding, as a sulphuret, 30 per cent. of metal. We may indulge in the notion that this vein might have afforded metal that formed the weapons of war of our forefathers; we may, therefore, easily be flattered into the hope that it may produce the arms of (by some strange alchemy of names converted into that of) an enlightened generation, especially as the lode contains an abundance of silver, and is a considerable vein.—None 5.—The mine continues to look as well as it is possible to expect. The lode stopping down in the side of the level Coed adit continues exceedingly productive, and we are making rapid progress in opening this level for a railroad. The ore, also in the back of the level Coed, is very good, and everything bids fair to give us a rich mine.

**EAST BIRCH TOR.**—I am happy to inform you that the tributers' tin fetched 45l. 2s. 6d. per ton at the Calenick Smelting-house; and we have this week sent off 21 tons of proprietors' tin to Mitchell's, of Truro, equal to the last. We have no alteration in our workings since my last report.

**EAST CROWDALE.**—At the middle shaft, sinking below the 28 fathom level, there is still a fair lode, worth 10l. per fm.; in the same level east, the lode is large and tinny, but not rich; the same level, west of middle shaft, and east of sump, has been communicated to the driving from this point. Our tribute pitchea throughout are looking well. Our January and February ores are now at surface, and will all go under the stamps next week, and we hope to sample about the middle or latter end of the following week all the tin promised in last report, and also 2 tons of November and December tin.

**ESGAR LLEE.**—Our pay and setting was on Saturday last, March 2, and the following is an account of the latter:—The deep adit, east of Morgan's winze, on the caunter lode, by six men, 1 fm., or cut through the lode, at 8l. 10s.; the deep well, west of Morgan's winze, on the north lode, to carry all the lode, or 6 ft. wide, of six men, 3 fms., or the month, at 4l. 10s. per fathom. The 12 fm. level, west of Morgan's winze, on the north lode, to carry all the lode, or 6 ft. wide, by six men, 3 fms. stent, or the month, at 4l. 10s. per fm.; the 12 fm. level, east from surface, on the caunter lode, or 6 ft. wide, by six men, 3 fms. stent, or the month, at 5l. 10s. per fm. To stop the back of the deep adit, west of the cross-cut, on the north lode, by six men, 10 fms. stent, or the month, at 17l. 10s. per fm. During the past week we have not done anything in the deep adit on the caunter lode, west of the junction, lode being the same as when last reported, but as soon as the tramroad is put in, the level will be resumed. In the course of another week or 10 days, I think we shall ascertain whether the caunter lode is running behind or south of the present level, also south of Morgan's winze; at present I think it will, but on this point I will be more explicit in my next report; the lode here is much the same as last reported. The new or north lode in the deep adit, west of Morgan's winze, is looking very promising, being 5 feet wide, and will yield, on an average, from 20 to 30 cwt. of ore per fm. The lode in the 12 fm. level, west of Morgan's winze, is improved since my last report; also the caunter lode east from surface, which will at this time yield 3 fms., or the month, at 4l. 10s. per fathom; in fact, on the whole, our prospects are improved since my last report. We have fixed on the site to erect the 40-foot wheel and crusher, and will have the wheel-pit cut out as soon as possible. I feel deeply thankful for your kindness in the appointment of another agent to these mines to assist me.

**EAST WHEAL GEORGE.**—The survey took place this day, according to notice, the result of which I beg to submit:—Roadway to form, clear, and build heuge,







and hope, at succeeding meetings, to have to announce such additional discoveries as shall insure to them lastingly profitable results from Wheal Russell.

**SHARP TOR.**—A meeting of the managers of this company took place on Thursday, when it was resolved at once to fix a 30-in. steam-engine, in order to prosecute this promising adventure to a greater depth. The shaft at its present bottom (15 fms.) presents a more promising appearance, and indicates a most lasting and profitable mine. The finances looked most encouragingly, as there was cash in hand for the next three months' workings. The manager, Mr. J. H. Hitchens, of the Devon Consols, was deputed to endeavour to look out for a second-hand engine, and report to the managing committee.

**SOUTH WHEAL FRANCES.**—The statement of accounts for Dec. and Jan. shows—By ores sold, 2957. 3s. 2d.; tin, 753. 10s. 8d.; property tax on dues 71 4s. 4d.—8717. 18s. 2d.—To labour cost, 1259. 0s. 1d.; merchants' bills, 3632. 1s. 4d.; dues, 247. 7s. 6d.; income tax, half-year, 72. 18s. 4d.—balance, 1775. 10s. 11d.; add balance, end of November, 932. 9s. 7d.—2708. 0s. 6d.; deduct dividend of 12. 10s. per share, 1550. 15s. 6d.—leaves a balance of 1168. 0s. 6d.

**EAST BULLER.**—A meeting of adventurers was held at Penrithal account-house, on the 27th February, when the accounts were produced, showing a balance of 410. 3s. 8d. due to pursuer. A call of 1. 1s. per share was made. Capt. James Higgins was appointed captain at a salary of 4. 4s. per month, with the understanding that he be allowed to devote a portion of his time to the adjoining mine, Bell and Penrithal.

**GREAT WORK.**—A meeting of adventurers took place on the 27th February, when the accounts for Oct., Nov., and Dec. were allowed, showing—By balance at the end of September, 276. 12s. 2d.; ores sold, 3467. 13s. 9d.; materials sold, 159. 12s. 11d.—3943. 19s. 10d.—To costs, &c., 3561. 12s. 11d.; dividend of 10. 1s. per share, 110. 1s. 11d.—balance in favour of adventurers, 392. 5s. 11d.—A dividend of 10. 1s. per share was declared.

**WHEAL COMFORT.**—A meeting of adventurers was held in Wheal Buller account-house, on the 1st March, when the accounts were presented and passed. The accounts showed—Balance from last account, 244. 0s. 11d.; ores sold (less dues), 1263. 1s. 11d.—1507. 2s. 10d.—To costs and merchants' bills for December and January, 573. 7s. 9d.; dividend of 3. 1s. per share, 34. 1s. 11d.—1871. 7s. 9d.—balance in favour of adventurers, 244. 0s. 11d.—A dividend of 3. 1s. per share was declared.

**EAST WHEAL ROSE.**—A meeting of adventurers was held at Pearce's Royal Hotel, Truro, on the 7th March, when the accounts were presented and passed. The accounts showed—Balance from last account, 262. 9s. 7d.; ores sold (less dues), 8510. 2s.; Carroll's advances for wages, &c., 144. 1s. 3d.; proportion of profit in Carroll's 336. 13s. 11d.—11,737. 6s. 9d.—To costs, &c., and merchants' bills, 6393. 12s.; carriage of ores and coals, 159. 19s. 4d.; taxes, 228. 11s.; account of new steam-engines, 418. 1s.; dividend of 15. 1s. per share, 1920. 2s. 4d.—leaving balance in favour of adventurers, 2633. 4s. 5d.—A dividend of 15. 1s. per share was declared.

#### CARADON VALE MINE.

Sir,—Observing, in last week's Journal, an advertisement of a company about to be established by the above name, in St. Ives parish, Cornwall, I was instrumental, with others, in procuring the opinion of Mr. Robert Dunstan (the agent of West Caradon), feeling assured that, from his experience in the working of the lodes in that district, I should fully understand whether the mine so called is worthy of the distinction named in the prospectus. I am happy to state, that Mr. Dunstan's report and remarks are of the most favourable description.—HENRY TRAVER, *Stoke, Devon, March 5.*

[Capt. Dunstan's report will be found among our "Mining Correspondence."]—

#### SHARE JOBBING—TINCROFT SHARES.

Sir,—In your Journal of Saturday last, under the head of "Share Jobbing," you have published a report of an action, as tried in the Lord Mayor's Court, on the 25th Feb. (Brown v. Byron), which I beg to state is totally at variance, not only with the evidence adduced, but also with the merits of the transaction. I, therefore, request the favour of your giving insertion to the following facts—viz.: that on the 6th August last I employed Mr. Brown, as my agent, to sell 25 Tincroft shares, at the limit of 10. 2s. 6d. per share; for so doing, it was agreed to charge me a commission of 1s. 3d. per share. It was, however, represented by Mr. Brown's clerk that he could obtain no more than 10. 1s. per share—whereas, on the contrary, he had previously been offered, and did obtain, 10. 2s. 6d. per share. This fact having come to my knowledge, I immediately went to Mr. Brown's office, and remonstrated with his clerk for having wilfully deceived me in the matter, and demanded to be furnished with a "contract" at the price he had sold the shares for; this was *insolently refused* me, and, under such circumstances, I repudiated the transaction. The shares were subsequently sold by Mr. James Lane, at my request, at 10. 7s. 6d. per share, on the very same day, to whom the shares were delivered, and paid for on the following day, and not to a person of the name of Balcombe, as erroneously stated in your report. I beg further to state, that had your reporter been present at the trial, he would have been informed by the Recorder, in the summing up of the case to the jury, and proved by the plaintiff's own witnesses, that an attempt had been made to defraud, or cheat, me out of 2s. 6d. per share, and that I was, therefore, perfectly and legally justified in repudiating the transaction. On such evidence the Recorder directed the jury to return a verdict in my favour.—The Editor, *March 4.*

#### MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

**MULLION, NEAR HILTON.**—During the past week, another sett has been obtained adjoining the Wheal Trenchance Mines, in this parish, by a party of principally Cornish adventurers, for the purpose of starting another copper mine, under the management of Captain Hensley, of Marazion. The works on the Wheal Trenchance Mines are now in a very forward state, and on the starting of the first steam-engine on this speculation, the whole of the people employed in this adventure were liberally provided on Saturday last, by their spirited manager, Mr. Richard Dalton, with good old English fare, roast beef and pudding, together with as much bread and cheese and beer as each individual could make use of. The spread was at two o'clock, in a long room on the mine, and the regulations were carried out by the directors, the captain, and Mr. William Nicholas, of Mullion. Dinner being over, the health of the adventurers was proposed and received by the party with the greatest enthusiasm. The health of the resident director, and the directors in London, was also drunk and responded to, and the afternoon was spent in a very convivial and pleasant manner. The working of the different mines in this parish must prove a great boon to the inhabitants, particularly in this time of agricultural depression. It is the opinion in this locality that the most sanguine expectations of the spirited adventurers will be realised, and that it will lead to its becoming a great mining district.

**KISWICK.**—The accounts from these mines are very favourable, and there is every reason to believe that they will shortly be in a remunerative position. At the Brandley Mine the lode is of a very promising character, with a string of nearly solid lead ore, 6 in. in width.

**WHEAL CARPENTER (GWINEAR).**—Within the last few days a very valuable discovery has been made here; it consists of a rich course of grey copper ore, yielding 80 per cent. of fine copper, cut in the 17 in. level—a splendid specimen of it I saw yesterday in the office of Mr. G. J. Phillips, Camborne. I understand that, in consequence of this good fortune for the adventurers, the shares (256ths) are in great demand. It is probable that this circumstance will give an impetus to mining in that locality, which has furnished several good mines—viz.: Herland, Great Wheal Alfred, &c.

[From the Plymouth Journal.]

It is very gratifying to find that the mining interest in this locality not only retains its position but advances. In the district of Liskeard, the recent discovery in the 129 fm. level, of a lode in the Phoenix (late Chicombe) Mines, estimated to be worth 50. 0s. per fm., has given great encouragement. A good discovery (lead) is also reported in Bardon, and the mines, as a whole, are looking well, and there is an active enquiry for mining property. In our own district we have nothing very new to report, except that Sir Ralph Loder, having permanently lowered the ducal on Wheal Franco to an 18th, and granted the Wheal Massett set to the spirited adventurers in that undertaking, operations will there be resumed with spirit, the shafts sunk, and the mine more fully explored. The liberal example of Sir Ralph was, we understand, followed by Mr. R. Spry. The Wheal Anderson adventurers have determined on prosecuting their mine for three months longer, and have made a call of 1. 1s. per share for that purpose. It was, we understand, suggested that this shaft should be worked in conjunction with the Tavistock Consols, and both companies remodelled, thus holding out a sufficient inducement to the united companies to drive cross-cuts from the engine to intersect the four large lodes seen in the Tavistock Consols (late Wheal Ash, &c.) sets, at a depth of upwards of 100 fms. from the surface, and thus out of the two concerns making one of the grandest undertakings in the west. The lode lately discovered on the land of William Wynand, Esq., at Elbridge, near Cargreen, and which, we understand, is to be called Wheal Jane, continues to attract general attention amongst miners, and improves as it gets down into settled ground; it is a master lode, about 44 feet wide, and the walls very clear and distinct. Large rocks of lead, very rich in silver, are being constantly brought up, which are broken 6 fms. under the surface. Wheal Russell continues to improve, and bids fair to be a good mine. The West Bedford United, which includes the Gunns Lake set, and the western part of Bedford United, is to be set at work, and shares are in request. At Hawkmoor the engine-shaft is 10 fms. under the adit level (the 20), and the lode is very good, producing about 7 tons of ore of excellent quality per fm. The 30 fm. level will open a large extent of tribute ground. The Messrs. Cartwright, who are, we understand, the principal holders in this mine, have conducted it with much spirit, and we rejoice to see their labour crowned with success. Wheal Providence, in South Sydenham, has been resumed, and a very fine course of lead cut in the adit level, worth 20. 0s. per fm. The adit has been extended nearly 270 fms. on a small lode, parallel to that just cut, and this mine will be opened at a nominal cost. The engine-shaft has been sunk 30 fms. under the adit, but this lode has not been cut, nor was it, as far as we are aware, before known. The eastern part of Plymouth Wheal Yecand continues to be the most promising and most productive. Preparation is making for opening Wheal Genny, and the mine on Castle Farm. With the increased activity which at this moment pervades the mining world, we are happy to observe more of caution and business-like habit, and we venture to hope and believe that there will not be again such extravagant surface expenditure as in by-gone days.

**TAVISTOCK CONSOLS.**—We have for the last fortnight, for the purpose of expedition driven the adit by the side of the lode, the ground being much softer than the lode which has been cut through, and is composed of mangle, spar, and peat, and is letting down a very large stream of water—it is a very kindly lode.

**WHEAL FRANCO.**—The lode in the rise in the back of the 62 fm. level is producing good stones of ore, but is not so good as when we commenced rising from the back of the level, which clearly indicates that we should go deeper. The lode in the 52 fm. level, west of the shaft, is at present disordered by a cross-course; the lode made flat up against the cross-course, and was very promising in character, which leads us to expect it to be of a like character on the other side. The lode in the rise in the bottom of the 47 fm. level is much of the same character as the lode in the rise in the back of the 62 fm. level; we expect to communicate the rise in the three weeks, when the backs will be let on tribute. The pitches are, on the whole, looking much as they have done.

**PLYMOUTH WHEAL YEOLAND.**—We have commenced driving the 32 fm. level east and west of the engine-shaft, but have not done enough to be able to give an opinion as to the appearances at this point. The lode in the 30 fm. level east has improved lately, and the stones in the back of this level are producing fair work. The new pitch in the bottom of the 20 fm. level, west of this shaft, is also producing tolerable good work.

**WHEAL JANE (LANDULPH).**—The lode in the shaft is considerably improved within the last two days; it is now full 4 ft. 6 in., and the underlay about 2 ft. 4 in. in a fm., comprised of silver-lead ore, pyrite, quartz, and spots of mangle. We have stones of silver-lead varying from 1 to 1 cwt.

**WHEAL PROVIDENCE (SOUTH SYDENHAM).**—Operations are to be commenced immediately—the prospects are most encouraging. The ore assayed by Mr. J. Hitchens, of Tavistock, produced 15. 1s. 2d. per ton lead, and 8. 0s. of silver in the ton of ore.

#### New Patents.

[From the *Mechanics' Magazine* of this day.]

#### SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

Sir JOHN MACNEIL, Knight, Dublin, and T. BARRY, Lyons, near Dublin, mechanic: For improvements in locomotive engines, and in the construction of railways. These improvements embrace—1. A mode of constructing and working the slide valves of locomotive steam-engines by means of two eccentrics, instead of four, as has hitherto been usual. And—2. A mode of constructing iron sleepers, which are united by flexible (malleable iron) or the back and rest upon cast-iron plate bolts. The cross-rails, the under faces of the sleepers, and the top surfaces of the cast-iron plates, are furnished with grooves and feathers, to keep the rail to the required gauge.

Claims.—1. The construction and mode of working the slide valves of locomotive steam-engines by two eccentrics instead of four.—2. The construction of iron sleepers combined with flexible cross-bars, which possess the advantages of longitudinal and cross sleepers, and prevent oscillation of the engine, by allowing the rail to assume the inclination adapted to the tread of the wheel.

J. M. HEATH, gentleman, Hanwell, Middlesex: For improvements in the manufacture of steel. The improvements embraced under this patent consist in subjecting iron, in a granular state, obtained by the cementation or decarburising of ores (by preference magnetic ores) to a welding heat, in combination with manganese and carbon. The iron is afterwards made into bloom, then into bars or slabs, which are subsequently converted in the usual way. The proportions given by the patentee are—1 to 3 lbs. of oxide or chloride of manganese, and 1 to 2 gallons of coal tar, or other hydro-carbon, to every 100 lbs. of iron.

Claim.—Subjecting iron, in a granular state, to a welding heat, when combined with manganese and carbon; which iron is afterwards to be made into bars or slabs, or other suitable form, and converted.

J. HOSKING, Newcastle-upon-Tyne, engineer: For an improved pavement. The patentee describes and claims:—The constructing a pavement of blocks of wood, either alone, or combined with tiles or blocks of any other suitable substance, which are perforated with longitudinal transverse holes for the purpose of drainage. The blocks of wood, or portions of them, are made with teeth, which project above the general surface of the pavement, so as to form a number of interstices, which are filled with broken stones, asphaltum, or other substance employed for pavement, in such manner as to form the bearing surface of the road. The patentee states that a pavement constructed according to his invention will last much longer than ordinary ones, inasmuch as the wooden teeth will prevent the grinding action of the stones under pressure; and that it also causes less noise than the ordinary stone pavement.

#### LIST OF PATENTS GRANTED DURING THE PAST WEEK.

T. Richards, W. Taylor, and J. Wythe, the younger, of Falcon Works, Walworth, Surrey, cotton manufacturers, for improved rollers to be used in the manufacture of silk, cotton, woolen, and other fabrics.

W. E. Stallo, gentleman, of Throgmorton-street, London, for improvements in pipes for smoking, and in apparatus connected therewith.

W. McNaught, of Rochdale, Lancashire, engineer, for certain improvements in steam-engines, and also improvements in apparatus for ascertaining and registering the power of the same.

J. Fowler, jun., of Melkham, Wilts, engineer, for improvements in draining land.

W. B. Stotes, of Golden-square, Middlesex, Manchester, warehouseman, for improvements in treating pest and other carbonaceous and ligneous matters, so as to obtain products therefrom. (Being a communication.)

W. Brown, of Aldridge, Lancashire, electrician, and W. Williams, the younger, of St. Dennis, Cornwall, gentleman, for improvements in electric and magnetic apparatus for indicating and communicating intelligence.

H. J. Twilling, of Bayswater, Middlesex, commission agent, for improvements in the manufacture of fuel and manure, and decolorising and disinfecting materials.

W. Church, of Birmingham, engineer, for certain improvements in machinery or apparatus to be employed in manufacturing cards and other articles composed wholly or in part of paper or pasteboard, part or parts of the said machinery being applicable to printing the same, and parts to other purposes where pressure is required.

R. A. Brown, of the firm of Messrs. J. C. Robertson, and Geo. W. Fleet-street, patent agent, for improvements in types, stereotype plates, and other figured surfaces for printing from. (Being a communication.)

R. Carte, of Southampton-street, Strand, Middlesex, professor of music, for improvements in the musical instruments designated flutes, clarionets, hautboys, and bassoons.

J. Taylor, of Manchester, mechanical designer, and R. Hirst, of Rochdale, in the same county, cotton spinner, for certain improvements in, and applicable to looms for weaving, and machinery of apparatus for preparing, spinning, and winding warps or yarns.

Gerard John De Witte, of Brook-street, Westminster, Middlesex, gentleman, for improvements in machinery, apparatus, metallic and other substances, for the purposes of letter-press and other printing. (Being a communication.)

J. Tebay, of Hackney, Middlesex, civil engineer, for an improved meter for registering the flow of water and other fluids.

F. Harris, Braintree, Essex, of Albemarle-street, Middlesex, and C. Montgomery, of the Army and Navy Club, St. James's-square, Middlesex, for improvements in sawing, cutting, boring, and shaping wood.

#### DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

R. W. Winfield, Birmingham, sacking for metallic bedstead.

E. Harris, Braintree, Essex, of Albemarle-street, Middlesex, "the Annual Cultivator."

N. C. Finch, Gloucester, pattern cutting machine.

Smiths and Co., Edinburgh, wick elevator.

J. Firth, Belfast, fire-brick for locomotive and other furnaces.

J. Moon, Malton, Yorkshire, chimney cap.

J. S. Willway, Denmark-street, Bristol, pneumatic, or gas carrier.

E. J. Vickery, Great Dover-road, Borough, merino bodied hat.

J. T. Woodman, Walton-on-Thames, leg and foot rest.

W. G. Barker, Old Cavendish-street, an elastic opening to be inserted in boots or shoes.

W. Johnson, Farnworth, Lancashire, lubricator.

The Rev. A. S. Atcheson, rector of Leigh, Rutland, writing, travelling, or invalid's table.

S. Sheppard, Birmingham, pump with draught and stop-cock.

J. and C. Clark, Wolverhampton, coffee-mill.

#### ACCIDENTS.

**Carleau Clay-works.**—As Thomas Jullif was following his employ, some earth fell on him and buried him. He was taken out alive, but died of the injuries he had received.

**Par Consols.**—As John Lord was removing some old workings from the shaft, he was caught by a rope, and drawn into the machinery. One of his arms was pulled off, and his limbs crushed to pieces.

**Liskeard.**—As W. Phillips was standing with two companions on a board place across the shaft in the 90 fm. level, a ladder came away from the upper part of the shaft and struck the board on which they were standing, when Phillips fell into the shaft below, about 8 fms. The two others were saved by holding on by the side of the shaft. A comrade, named Richards, went down immediately, and found that deceased had fallen into the water, when he dived, and brought him up: being alive, he was brought to grass, where medical aid was in readiness; he was removed to his home, but never spoke, and died in consequence of the injuries he had received on his head in falling.

**West Bromwich—Shocking Occurrence at a Colliery.**—A painful instance of that disregard for the safety of life and limb which is so frequently exemplified among the colliers of South Staffordshire, occurred at Messrs. Tildesley and Botley's Bill Hay Colliery. The majority of the men descended the pit at the usual hour, but shortly afterwards two who were late in coming to work, got into an empty skip, which was going down for coals, to be lowered with it. They were advised to go down one at a time, and to use some tackling, to render their descent more safe, as such a skip was not fitted for being so used, but both these recommendations they disregarded. When they had got about half way down the shaft, the iron bow of the skip snapped asunder, and it fell to the bottom, by which one of the men was immediately killed, and the other much injured.

**Birmingham.**—A man named Gold was killed in a coal-pit belonging to Scott and Foley. He had been knocking out the "lamb," or wedges, without taking the usual precaution of having a man to listen and give warning, when the coal fell upon him and buried him.

#### COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

**MONDAY.**—Buddle's West Hartley 15—Carr's Hartley 15—Chester Main 14 3—Davison's West Hartley 15—East Adair's Main 11—Hastings Hartley 14 9—Holwell 16 6—New Tanfield 14—Tandem Moor Botes 13 6—Towline 15—West Hartley 15 6—Walls' End Acon Close 15 6—Brown 15 9—Brown's Gas 13—Hotsay 14 6—Hilda 14 9—Gibson 15—Eden Main 16—Hutton 17 6—Hawthill 19—Russell's Hutton 17—Hough Hall 15 6—West Belmont 15 9—West Hutton 15 6—Whitworth 14—Maclean's Tees 14 6—South Durham 15 6—Tees 17 6—Birchgrove Galgates 21—Cowpen Hartley 15—Hartley 14—Howard's West Hartley Netherthorn 15—Langnecch 25—Sidney's Hartley 15—Ships at market, 342; sold, 85.

**WEDNESDAY.**—Carr's Hartley 15—Chester Main 14—Davison's West Hartley 15—East Adair's Main 12—Hastings Hartley 14 6—New Tanfield 13 6—Old Tanfield 13—Hastings' West Hartley 15—South Pesh 13—Tandem Moor Botes 13 6—Walker's Primrose 13—Walls' End Brown 13 6—Hilda 14 6—Killingworth 14 6—Walls' Primrose 12 6—Walls' End Brown 13 6—Gosforth 14 3—Hilda 14 3—Hutton 17—Hawthill 19—Russell's Hutton 17—Denison 14 6—Hough Hall 15—Hartlepool 17—Hesleden 15—Kelroe 16 6—South Kelroe 15—Thornley 16—West Hutton 15—Cowden Tees 14 9—Maclean's Tees 11—Seymour Tees 15—South Durham 15—Birchgrove Galgates 21—Cowpen Hartley 15—Derwentwater Hartley 15—Hartley 14—Howard's West Hartley Netherthorn 15—Sidney's Hartley 14 9—Ships at market, 360; sold, 115.

**FRIDAY.**—Carr's Hartley 15—Chester Main 13 6—Davison's West Hartley 15—Adair's Main 12 6—Hastings Hartley 14 9—New Tanfield 13 6—Ord's Redheugh 13 6—Ravenworth's West Hartley 15—Tandem Moor Botes 13 6—Towline 15 6—Walls' Primrose 12 6—Walls' End Brown 13 6—Gosforth 14 3—Hilda 14 3—Hutton 17—Hawthill 19—Russell's Hutton 17—Denison 14 6—Hough Hall 15—Hartlepool 17—Hesleden 15—Kelroe 16 6—South Kelroe 15—Thornley 16—West Hutton 15—Cowden Tees 14 9—Maclean's Tees 11—Seymour Tees 15—South Durham 15—Birchgrove Galgates 21—Cowpen Hartley 15—Derwentwater Hartley 15—Hartley 14—Howard's West Hartley Netherthorn 15—Sidney's Hartley 14 9—Ships at market, 290; sold, 67.

#### BOARD OF TRADE RETURNS.

The official accounts of the trade and navigation of the United Kingdom, for the month ended 5th February, possess more than ordinary interest, as being the first returns published since the repeal of the Navigation Laws. By these tables, it is evident that trade has not suffered by the removal of those restrictions, which were so many trammels on its operations; but, on the contrary, it has exhibited an expansiveness which is to be attributed entirely to its perfect freedom; and the imports, as well as exports, have been increased thereby in a very remarkable degree. The exports of the month amount to 4,069,431, against 3,211,146, last year, and 3,373,713, in the same period of 1848—the great increase being exhibited in cotton manufactures, woollen cloths, hardware and cutlery, metals, and machinery.—Among the importations of foreign and colonial merchandise are shown the following:—

	1848.	1849.	1850.
METALS—Copper ore .....	1,324	2,847	4,450
" Copper .....	1,324	2,847	4,450
" Iron .....	1,070	1,657	5
" Steel .....	—	—	—
" Lead .....	—	—	473
" Spelter .....	84	370	186
Quicksilver .....	—	—	40,843

The following table shows at a glance the value of the exports of each of the undermentioned articles:—

	1848.	1849.	1850.
Coals and culm .....	£70,000	£51,076	£57,269
Earthenware .....	57,943	51,627	73,490
Hardware and cutlery .....	161,529	112,587	186,021
MACHINERY—Steam-engines .....	7,822	4,060	50,236
" Other sorts .....	32,375	14,040	29,364
METALS—Iron, pig .....	32,375	14,040	9,418
" Bar, bolt, and rod .....	137,344	85,239	187,565
" Cast .....	2,366	2,362	3,476
" Wrought .....	20,407	7,312	11,094
" Steel .....	78,068	59,474	75,794
" Copper .....	22,830	21,783	22,249
" Sheets, nails, &c. .....	29,615	50,280	45,093
" Other sorts .....	37,325	54,840	81,421
" Brass .....	7,972	5,060	3,368
" Lead .....	3,533	4,371	8,671
" Tin .....	3,861	8,574	11,595
" Plates .....	16,103	7,359	7,560
" Quicksilver .....	45,969	26,007	67,386

The exports of foreign and colonial merchandise show an increase, as compared with last year, in the articles of cotton yarn, indigo, embroidery, and needle-work; guano, wet hides, leather manufactures, opium, quicksilver, raw silk, silk broad stuffs, brandy, refined sugar, tobacco, sheep's wool, and woollen manufactures; whilst there is a decrease in cocoa, coffee, dry hides, metals, palm oil, spices, rum and Geneva, raw sugar, &c.

#### LATEST CURRENT PRICES OF METALS.

LONDON, MARCH 8, 1850.

ENGLISH IRON, &c.	per ton.	Tile.....	£57 10 0
Bar, bolt, & square, London .....	£5 15-6 0	Old copper.....	per lb. 8½
Nail rods .....	6 15 0	Yellow Metal Sheathing .....	8½
Hoops .....	7 15 0-8	FOREIGN COPPER, &c.	
Sheets (angles).....	8 10-8 15	Russian, PSI.....	15 0 0
Bars, at Cardiff & Newport .....	5 0-5 15	ENGLISH LEAD, &c.	
Refined metal, Wales.....	3 5-3 10	Pig .....	per ton 18 0-18 10
Do. anthracite.....	3 15 0	Sheet .....	19 0-19 15
Pigs in Wales .....	3 5 0	Red lead.....	19 10 0
Do. do. forge .....	2 15 0	White ditto .....	25 0 0
Do. No. 1, Clyde, net cash .....	2 4-2 5 6	Patent shot .....	21 0 0
Blewitt's Patent Refined Iron for bars, rails, &c., free on board at Newport.....	3 15 0	FOREIGN LEAD, &c.	
Do. do. for tin-plates, boiler plates, &c., ditto.....	4 10 2	Spanish, in bond.....	17 0-18 0
Stirling's Patent 3 in Glasgow .....	2 17-3 0	American ditto.....	—
Toughened Pigs in Wales.....	3 10-3 15	ENGLISH TIN, &c.	
Staffordshire bars, at the works .....	6 0 0	Block .....	per cwt. 4 5 0
Pigs in Staffordshire .....	5 0 0	Bar .....	4 6 0
Rails .....	5 5-5 7 6	Refined .....	4 11 0
Phosphoric .....	4 0 0	FOREIGN TIN &c.	
FOREIGN IRON, &c.		Russia, H. C.....	4 2-4 4
Swedish .....	12 10-13 10	Ditto, for Export only .....	4 0 0
CND.....	12 10-13 10	Straits .....	4 0-4 1
PSI.....		TIN-PLATES, &c.	
Donrrieff .....		IC Coke.....	per box 1 8 6-1 9
Archangel .....		IC Charcoal .....	1 13-1 14
		IX ditto .....	1 19 0
FOREIGN STEEL, &c.		SPELTER, &c.	
Swedish keg .....	14 15 0	Plates, warehoused .....	per ton 15 15-17 0
Ditto faggot .....	14 8 0-15	Ditto, to arrive.....	16 5-16 10
ENGLISH COPPER, &c.		ZINC, &c.	
Sheets, sheathing, & bolts, p. lb. .....	0 10 10	English sheet .....	per ton 21 0-22
Tough cake .....	per ton 58 10 0	QUICKSILVER.....	per lb. 4s. 4d. 6d.
Terms.—a, 6 months, or 2½ per cent. d. ; b, ditto ; c, ditto ; d, 6 months, or 3 per cent. d. ; e, 6 months, or 2½ per cent. d. ; f, ditto ; g, ditto ; h, ditto ; i, ditto ; & new cash, 6 months, or 3 p. cent. d. ; m, net cash ; n, 3 months, or 1½ p. cent. d. ; o, ditto, 1½ dis. * Cold-blast, free on board in Wales.			



### PRICES OF MINING SHARES.



and hope, at succeeding meetings, to have to announce such additional discoveries as shall insure to them lastingly profitable results from Wheal Russell.

**SHARP TOR.**—A meeting of the managers of this company took place on Thursday, when it was resolved at once to fix a 30-in. steam-engine, in order to prosecute this promising adventure to a greater depth. The shaft at its present bottom (15 fms.) presents a more promising appearance, and indicates a most lasting and profitable mine. The finances looked most encouragingly, as there was cash in hand for the next three months' working. The manager, Mr. J. H. Hitchens, of the Devon Consols, was deputed to endeavour to look out for a second-hand engine, and report to the managing committee.

**SOUTH WHEAL FRANCES.**—The statement of accounts for Dec. and Jan. shows—By ores sold, 29577.3s. 2d.; tin, 7532.10s. 8d.; property tax on dues 71.4s. 4d.—37172.18s. 2d.—To labour cost, 12592.10s. 1d.; merchants' bills, 3632.1s. 4d.; dues, 2477.7s. 6d.; income tax, half-year, 722.18s. 4d.—balance, 17752.10s. 11d.; due balance, end of November, 9322.9s. 7d.—27082.0s. 6d.; deduct dividend of 122.10s. per share, 15502. leaves a balance of 11582.0s. 6d.

**EAST WHEAL FRANCES.**—A meeting of shareholders was held at Penrith account-house, on the 27th February, when the accounts were produced, showing a balance of 4102.8s. 8d. due to pursuer. A call of 11s. per share was made. Capt. James Higgins was appointed captain at a salary of 41.4s. per month, with the understanding that he be allowed to devote a portion of his time to the adjoining mine, Bell and Penrith.

**GREAT WORK.**—A meeting of shareholders took place on the 27th February, when the accounts for Oct. and Nov. were allowed, showing—By balance at the end of September, 3701.12s. 2d.; ores sold, 34672.13s. 9d.; materials sold, 1594.12s. 11d.—30422.19s. 10d.—To costs, &c., 35612.12s. 11d.; dividend of 102. per share, 11902.—35512.12s. 11d.; balance in favour of shareholders, 3222.5s. 11d.—A dividend of 102. per share was declared.

**WHEAL COMFORT.**—A meeting of shareholders was held in Wheal Buller account-house, on the 1st March, when the accounts were presented and passed. The accounts showed—Balance from last account, 2442.0s. 11d.; ores sold (less dues), 12632.1s. 11d.—15072.2s. 10d.—To costs and merchants' bills for December and January, 5732.7s. 9d.; dividend of 32. per share, 3842.—12272.7s. 9d.; balance in favour of shareholders, 2492.15s. 11d.—A dividend of 32. per share was declared.

**EAST WHEAL ROSE.**—A meeting of shareholders was held at Pearce's Royal Hotel, Truro, on the 7th March, when the accounts were presented and passed. The accounts showed—Balance from last account, 36622.9s. 7d.; ores sold (less dues), 86102.2s.; Cargill's advances for water charges, &c., 1442.1s. 3d.; proportion of profit in Cargill, 3367.13s. 11d.—117532.6s. 9d.—To costs, &c., and merchants' bills, 63932.12s.; carriage of ore and coal, 1594.12s. 4d.; taxes, 2222.11s.; account of new steam-engines, 4182.; dividend of 152. per share, 19202.—91202.2s. 4d.; leaving balance in favour of shareholders, 26332.4s. 5d.—A dividend of 152. per share was declared.

#### CARADON VALE MINE.

**SIR.**—Observing, in last week's Journal, an advertisement of a company about to be established by the above name, in St. Ives parish, Cornwall, I was instrumental, with others, in procuring the opinion of Mr. Robert Dunstan (the agent of West Caradon), feeling assured that, from his experience in the working of the lodes in that district, I should fully understand whether the mine so called is worthy of the distinction named in the prospectus. I am happy to state, that Mr. Dunstan's report and remarks are of the most favourable description.—HENRY TRAER: Stoke, Devon, March 5.

[Capt. Dunstan's report will be found among our "Mining Correspondence."]

#### SHARE JOBBING—TINCROFT SHARES.

**SIR.**—In your Journal of Saturday last, under the head of "Share Jobbing," you have published a report of an action, as tried in the Lord Mayor's Court, on the 23d Feb. (Brown v. Byron), which I beg to state is totally at variance, not only with the evidence adduced, but also with the real merits of the transaction. I, therefore, request the favour of your giving insertion to the following facts—viz.: that on the 6th August last I employed Mr. Brown, as my agent, to sell 25 Tincroft shares, at the limit of 102. 5s. 6d. per share; for so doing, it was agreed to charge me a commission of 1s. 8d. per share. It was, however, represented by Mr. Brown's clerk that he could obtain no more than 102. per share—whereas, on the contrary, he had previously been offered, and did obtain, 102. 5s. 6d. per share. This fact having come to my knowledge, I immediately went to Mr. Brown's office, and remonstrated with his clerk for having wilfully deceived me in the matter, and demanded to be furnished with a "contract" at the price he had sold the shares for; this was *involently* refused me, and, under such circumstances, I repudiated the transaction. The shares were subsequently sold by Mr. James Lane, at my request, at 102. 7s. 6d. per share, on the very same day, to whom the shares were delivered, and paid for on the following day, and not to a person of the name of Balcombe, as erroneously stated in your report. I beg further to state, that had your reporter been present at the trial, he would have been informed by the Recorder, in the summing up of the case to the jury, and proved by the plaintiff's own witnesses, that an attempt had been made to defraud, cheat, me out of 2s. 6d. per share, and that I was, therefore, perfectly and legally justified in repudiating the transaction. On such evidence the Recorder directed the jury to return a verdict in my favour.—HENRY TRAER: Stoke, Devon, March 5.

#### MINING NOTABILITIES.

[EXTRACTS FROM OUR CORRESPONDENCE.]

**MULLION, NEAR HELSTON.**—During the past week, another sett has been obtained adjoining the Wheal Trenchance Mines, in this parish, by a party of principally Cornish adventurers, for the purpose of starting another copper mine, under the management of Captain Hensley, of Marazion. The works on the Wheal Trenchance Mines are now in a very forward state, and on the starting of the first steam-engine on this speculation, the whole of the people employed in this adventure were liberally provided on Saturday last, by their spirited manager, Mr. Richard Dalton, with good old English fare, roast beef and pudding, together with as much bread and cheese and beer as each individual could make use of. The spread was at two o'clock, in a long room on the mine, and the regulations were carried out by the directors, the captain, and Mr. William Nicholas, of Mullion. Dinner being over, the health of the adventurers was proposed and received by the party with the greatest enthusiasm. The health of the resident director, and the directors in London, was also drunk and responded to. The working of the different mines in this parish must prove a great boon to the inhabitants, particularly in this time of agricultural depression. It is the opinion in this locality that the most sanguine expectations of the spirited adventurers will be realised, and that it will lead to its becoming a great mining district.

**KESWICK.**—The accounts from these mines are very favourable, and there is every reason to believe that they will shortly be in a remunerative position. At the Brandley Mine the lode is of a very promising character, with a string of nearly solid ore, 6 in. in width.

**WHEAL CARPENTER (GWISKEAR).**—Within the last few days a very valuable discovery has been made here; it consists of a rich course of grey copper ore, yielding 80 per cent. of fine copper, cut in the 17m. level—a splendid specimen of it I saw yesterday in the office of Mr. G. J. Phillips, Camborne. I understand that, in consequence of this good fortune for the adventurers, the shares (256ths) are in great demand. It is probable that this circumstance will give an impetus to mining in that locality, which has furnished several good mines—viz.: Herland, Great Wheal Alfred, &c.

[From the Plymouth Journal.]

It is very gratifying to find that the mining interest in this locality not only retains its position but advances. In the district of Liskeard, the recent discovery in the 120 fm. level of a lode in the Phoenix (late a Colcombe) Mine, estimated to be worth 502. per fm., has given great encouragement. A good discovery (lead) is also reported in Butterton, and the mines, as a whole, are looking well, and there is an active enquiry for mining property. In our own district we have nothing very new to report, except that Sir Ralph Lopes, having permanently lowered the dikes on Wheal Franco to an 18th, and granted the Wheal Massay sett to the spirited adventurers in that undertaking, operations will there be resumed with spirit, the shaft sunk, and the mine more fully explored. The liberal example of Sir Ralph was, we understand, followed by Mr. R. Spry. The Wheal Anderton adventurers have determined on prosecuting their mine for three months longer, and have made a call of 1s. per share for that purpose. It was, we understand, suggested that this sett should be worked in conjunction with the Tavistock Consols, and both companies remodelled, thus holding out a sufficient inducement to the united companies to drive cross-cuts from the engine to intersect the four large lodes seen in the Tavistock Consols (late Wheal Ash, &c.) sett, at a depth of upwards of 100 fms. from the surface, and thus out of the two concerns making one of the grandest undertakings in the west. The lode lately discovered on the land of William Wyndham, Esq., at Elbridge, near Cargreen, and which, we understand, is to be called Wheal Jane, continues to attract general attention amongst miners, and improves as it gets down into settled ground; it is a master lode, about 44 feet wide, and the walls very clear and distinct. Large lodes of lead, very rich in silver, are being constantly brought up, which are broken 6 fms. under the surface. Wheal Russell continues to improve, and bids fair to be a good mine. The West Bedford United, which includes the Gunns Lake sett, and the western part of Bedford United, is to be set at work, and shares are in request. At Barkmoor the engine-shaft is 10 fms. under the adit level (the 20), and the lode is very good, producing about 7 tons of ore of excellent quality per fm. The 30 fm. level will lay open a large extent of tribute ground. The Messrs. Cartwright, who are, we understand, the principal holders in this mine, have conducted it with much spirit, and we rejoice to see their labour crowned with success. Wheal Providence, in South Sydenham, has been resumed, and a very fine course of lead cut in the adit level, worth 206. per fm. The adit has been extended nearly 270 fms. on a small lode, parallel to that just cut, so that this mine will be opened at a nominal cost. The engine-shaft has been sunk 30 fms. under the adit, but this lode has not been cut, nor was it, as far as we are aware, before known. The eastern part of Plymouth Wheal Yeoland continues to be the most promising and most productive. Preparations are making for opening Wheal Genny, and the mine on Castle Farm. With the increased activity which at this moment pervades the mining world, we are happy to observe more of caution and business-like habit, and we venture to hope and believe that there will not be again such extravagant surface expenditure as in by-gone days.

**TAVISTOCK CONSOLS.**—We have for the last fortnight, for the purpose of expedition driven the adit by the side of the lode, the ground being much softer than the lode which has been cut through, and is composed of mangle, spar, and peach, and is letting down a very large stream of water—it is a very kindly lode.

**WHEAL FRANCO.**—The lode in the rise in the back of the 92 fm. level is producing good stones of ore, but is not so good as when we commenced rising from the back of the lode, which clearly indicates that we should go deeper. The lode in the 63 fm. level, west of the shaft, is at present disordered by a cross-course; the lode made flat up against the cross-course, and was very promising in character, which leads us to expect it to be of a like character on the other side. The lode in the winze in the bottom of the 47 fm. level is much of the same character as the lode in the rise in the back of the 63 fm. level; we expect to communicate the winze with the rise in three weeks, when the lode will be let on tribute. The pitches are, on the whole, looking much as they have done.

**PLYMOUTH WHEAL YEOLAND.**—We have commenced driving the 32 fm. level east and west of the engine-shaft, but have not done enough to be able to give an opinion as to the appearances at this point. The lode in the 30 fm. level east has improved lately, and the slopes in the back of this level are producing fair work. The new pitch in the bottom of the 20 fm. level, west of this shaft, is also producing tolerable good work.

**WHEAL JANE (LANDULPH).**—The lode in the shaft is considerably improved within the last two days; it is now full 4 ft. big, and the underlay about 2 ft. 4 in. in a fm., comprised of silver-lead ore, pisan, quartz, and spots of mangle. We have stones of silver-lead varying from 1 to 1 cwt.

**WHEAL PROVIDENCE (SOUTH SYDENHAM).**—Operations are to be commenced immediately—the prospects are most encouraging. The ore assayed by Mr. J. Hitchens, of Tavistock, produced 152 in 20 for lead, and 81 ozs. of silver in the ton of ore.

#### NEW PATENTS.

[From the *Mechanics' Magazine* of this day.]

#### SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

**SIR JOHN MACNEIL, Knight, Dublin, and T. BARBY, Lyons, near Dublin, mechanics:** For improvements in locomotive engines, and in the construction of railways. These improvements embrace—1. A mode of constructing and working the slide valves of locomotive steam-engines by means of two eccentrics, instead of four, as has hitherto been usual. And—2. A mode of constructing iron sleepers, which are united by flexible (malleable) cross-bars, and rest upon cast-iron plates bolted to rigid cross-bars. The upper faces of the sleepers, and the top surfaces of the cast-iron plates, are furnished with grooves and fasteners, to keep the rail to the required gauge.

**Claims.**—1. The construction and mode of working the slide valves of locomotive steam-engines by two eccentrics instead of four. 2. The construction of iron sleepers combined with flexible cross-bars, which possess the advantages of longitudinal and cross sleepers, and prevent oscillation of the engine, by allowing the rail to assume the inclination adapted to the tread of the wheel.

**J. M. HEATH, gentleman, Hanwell, Middlesex:** For improvements in the manufacture of steel. The improvements embraced under this patent consist in subjecting iron, in a granular state, obtained by the cementation or decarburizing of ores (by preference magnetic ores) to a welding heat, in combination with manganese and carbon. The iron is afterwards made into bloom, then into bars or slabs, which are subsequently converted in the usual way. The proportions given by the patentee are—1 to 3 lbs. of oxide or chloride of manganese, and 1 to 2 gallons of coal tar, or other hydro-carbon, to every 100 lbs. of iron.

**Claims.**—Subjecting iron, in a granular state, to a welding heat, when combined with manganese and carbon; which iron is afterwards to be made into bars or slabs, or other suitable form, and converted.

**J. HOSKING, Newcastle-upon-Tyne, engineer:** For an improved pavement. The patentee describes and claims:—The constructing a pavement of blocks of wood, either alone, or combined with tiles or blocks of any other suitable substance, which are perforated with longitudinal and transverse holes for the purpose of drainage. The blocks of wood, or portions of them, are made with teeth, which project above the general surface of the pavement, so as to form a number of interstices, which are filled with broken stones, asphaltum, or other substance employed for pavement, in such manner as to form the bearing surface of the road. The patentee states that a pavement constructed according to his invention will last much longer than ordinary ones, inasmuch as the wooden teeth will prevent the grinding action of the stones under pressure; and that it also causes less noise than the ordinary stone pavement.

#### LIST OF PATENTS GRANTED DURING THE PAST WEEK.

T. Richards, W. Taylor, and J. Wythe, the younger, of Falcon Works, Walworth, Surrey, cotton manufacturers, for improved rollers to be used in the manufacture of silk, cotton, woolen, and other fabrics.

W. E. Stait, gentleman, of Throgmorton-street, London, for improvements in pipes for smoking, and in apparatus connected therewith.

W. McNaught, of Rochdale, Lancashire, engineer, for certain improvements in steam-engines, and also improvements in apparatus for ascertaining and registering the power of the same.

J. Fowler, jun., of Melkham, Wilts, engineer, for improvements in draining land.

W. B. Stones, of Golden-square, Middlesex, Manchester, warehouseman, for improvements in treating peat and other carbonaceous and ligneous matters, so as to obtain products therefrom. (Being a communication.)

W. Brown, of Aldridge, Lancashire, electrician, and W. Williams, the younger, of St. Dennis, Cornwall, gentleman, for improvements in electric and magnetic apparatus for indicating and communicating intelligence.

H. J. Towling, of Bayswater, Middlesex, commission agent, for improvements in the manufacture of fuel and manure, and deodorising and disinfecting materials.

W. Church, of Birmingham, engineer, for certain improvements in machinery or apparatus to be employed in manufacturing carriages and other articles composed wholly or in part of paper or pasteboard, part or parts of the said machinery being applicable to printing the same, and parts to other purposes where pressure is required.

R. A. Brooman, of the firm of Messrs. J. C. Robertson, and Co., of Fleet-street, patent agent, for improvements in types, stereotype plates, and other figured surfaces for printing from. (Being a communication.)

R. Carte, of Southampton-street, Strand, Middlesex, professor of music, for improvements in the musical instruments designated flutes, clarionets, hautboys, and bassoons.

J. Taylor, of Manchester, mechanical designer, and R. Hurst, of Rochdale, in the same capacity, for certain improvements in, and applicable to looms for weaving, and in machinery or apparatus for preparing, twisting, and winding warps or yarns.

Gerard John De Witte, of Brook-street, Westminster, Middlesex, gentleman, for improvements in machinery, apparatus, and metallic and other substances, for the purposes of letter-press and other printing. (Being a communication.)

J. Tebay, of Hackney, Middlesex, civil engineer, for an improved meter for registering the flow of water and other fluids.

F. Rosenberg, Esq., of Albemarle-street, Middlesex, and C. Montgomery, of the Army and Navy Club, St. James's-square, Middlesex, for improvements in sawing, cutting, boring, and shaping wood.

#### DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

R. W. Winfield, Birmingham, sacking for metallic bedstead.

R. Harris, Braunston, Northamptonshire, "the Annular Cultivator."

N. C. Fluck, Gloucester, pattern cutting machine.

Smith and Co., Edinburgh, wick elevator.

J. F. Bristell, fire-bar for locomotive and other furnaces.

J. Moon, Malton, Yorkshire, chimney cap.

J. S. Willey, of Manchester, mechanical designer, Bristol, aero-neumo, or gas carrier.

E. J. Vickers, Great Dover-road, Borough, negro bodied hat.

J. T. Woodman, Walton-on-Thames, leg and foot rest.

W. G. Barker, Old Cavendish-street, an elastic opening to be inserted in boots or shoes.

W. Johnson, Farnworth, Lancashire, lubricator.

The Rev. A. S. Acheson, rector of Teigh, Rutland, writing, travelling, or invalid's table.

S. Sheppard, Birmingham, pump with draught and stop-cock.

J. and C. Clark, Wolverhampton, coffee-mill.

#### ACCIDENTS.

**Carbide Clay-works.**—As Thomas Juliff was following his employ, some earth fell on him and buried him. He was taken out alive, but died of the injuries he had received.

**Par Consols.**—As John Lord was removing some old workings from the shaft, he was caught by a rope, and drawn into the machinery. One of his arms was pulled off, and his body crushed to pieces.

**Linkinhorpe.**—As W. Phillips was standing with two companions on a board placed across the shaft in the 90 fm. level, a ladder came away from the upper part of the shaft and struck the board on which they were standing, when Phillips fell into the shaft below, about 8 fms. The two others were saved by holding on by the side of the shaft. A comrade, named Richards, went down immediately, and found that deceased had fallen into the water, when he dived, and brought him up, being alive, he was brought to grass, where medical aid was in readiness; he was removed to his home, but never spoke, and died in consequence of the injuries he had received on his head in falling.

**West Bromwich—Shocking Occurrence at a Colliery.**—A painful instance of that disregard for the safety of life and limb which is so frequently exemplified among the colliers of the South Staffordshire, occurred at Messrs. Hildesley and Botteley's Bill Hay Colliery. The majority of the men descended the pit at the usual hour, but shortly afterwards two who were late in coming to work, got into an empty skip, which was going down for coals, to be lowered with it. They were advised to go down one at a time, and to use some tackling, to render their descent more safe, as such a skip was not fitted for being so used, but these recommendations they disregarded. When they had got about half way down the shaft, the iron bow of the skip snapped asunder, and it fell to the bottom, by which one of the men was immediately killed, and the other much injured.—*Birmingham Journal.*

**Wedgebury.**—Abraham Gold was killed in a coal-pit belonging to Scott and Foley. He had been knocking out the "lamb," or wedge, without taking the usual precaution of having a man to listen and give warning, when the coal fell upon him and buried him.

#### COAL MARKET, LONDON.

**PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.**

**MONDAY.**—Buddle's West Hartley 15—Carr's Hartley 15—Chester Main 14 3—Davison's West Hartley 15—East Adair's Main 13—Hastings Hartley 14 9—Hollywell 16 6—New Tanfield 14—Tanfield Moor Bute 13 6—Townley 15—West Hartley 15 6—Walls-End Acorn Close 16 6—Brown 13 9—Brown's Gas 13—Hotsup 14 6—Hilda 14 9—Gibson 15—Eden Main 16—Hutton 17 6—Hawwell 17 9—Russell's Hutton 17—Hough Hall 15 6—West Belmont 15 6—West Hutton 15 6—Whitworth 14—Maclean's Tees 14 6—South Durham 16 6—Tees 17 6—Birchgrove Grailgals 21—Copenen Hartley 15—Hartley 14—Howard's West Hartley Netherthorpe 15—Langeneuch 25—Sidney's Hartley 15.—Ships at market, 342; sold, 85.

**WEDNESDAY.**—Carr's Hartley 15—Chester Main 14—Davison's West Hartley 15—East Adair's Main 12 6—Hastings Hartley 14 6—New Tanfield 13 6—Old Tanfield 13—Ravenworth's West Hartley 15—South Pease 13—Tanfield Moor 15—Tanfield Moor Bute 13 6—Walker's Primrose 13.—Walls-End Brown 13 6—Hilda 14 6—Killingworth 14 3—Eden Main 16 6—Bell 15 6—Belmont 16—Bradley 16 6—Hawwell 17 6—Jonasohn's 14—Lambton 17—Lumley 15 6—Russell's Hutton 17—Denison 14 6—Hough Hall 15—Hartlepool 17 6—Heselden 15—Kelios 16 6—South Kelios 15—Thornley 16—West Hutton 15—Cowanen Tees 14 9—Maclean's Tees 15—Seymour Tees 15—South Durham 15—Birchgrove Grailgals 21—Copenen Hartley 15—Derwentwater Hartley 15—Hartley 14—Howard's West Hartley Netherthorpe 15—Sidney's Hartley 14 9—Ships at market, 585; sold, 115.

**FRIDAY.**—Carr's Hartley 15—Chester Main 13 6—Davison's West Hartley 15—East Adair's Main 12 6—Hastings Hartley 14 6—New Tanfield 13 6—Old Tanfield 13—Ravenworth's West Hartley 14 9—Tanfield Moor 14 6—Tanfield Moor Bute 13 6—Townley 14 6—Walker's Primrose 12 6—Walls-End Brown 13 6—Gosforth 14 3—Riddell's 14—Hutton 17—Hawwell 17 6—Jonasohn's 14—Russell's Hutton 16 6—Stewart's 17—Hough Hall 15—Adelaide Tees 16 3—Maclean's Tees 15 6—St. Helen's Tees 13 6—Tees 17—Birchgrove Grailgals 21—Copenen Hartley 15—Hartley 14 3—Howard's West Hartley Netherthorpe 15—Sidney's Hartley 14 9.—Ships at market, 290; sold, 67.

#### BOARD OF TRADE RETURNS.

The official accounts of the trade and navigation of the United Kingdom, for the month ended 5th February, possess more than ordinary interest, as being the first returns published since the repeal of the Navigation Laws. By these tables, it is evident that trade has not suffered by the removal of those restrictions, which were so many trammels on its operations; but, on the contrary, it has exhibited an expansiveness which is to be attributed entirely to its perfect freedom; and the imports, as well as exports, have been increased thereby in a very remarkable degree. The exports of the month amount to 4,069,431, against 3,211,146, last year, and 3,373,713, in the same period of 1848—the great increase being exhibited in cotton manufactures, woollen cloths, hardware and cutlery, metals, and machinery.—Among the importations of foreign and colonial merchandise are shown the following:—

	1848.	1849.	1850.
<b>METALS.</b>			
Copper ore .....	1,524	2,347	4,699
Copper .....	1,070	1,687	5
Steel .....	33	28	5
Lead .....	84	370	473
Spelter .....	84	370	186
Quicksilver .....	161,929	112,987	40,842

The following table shows at a glance the value of the exports of each of the undermentioned articles:—

	1848.	1849.	1850.
Coals and culm .....	270,000	261,076	257,262
Earthware .....	57,942	51,627	73,480
Hardware and cutlery .....	161,929	112,987	106,021
<b>MACHINERY.</b>			
Steam-engines .....	7,822	4,060	50,236
Other sorts .....	32,273	14,340	28,364
<b>METALS.</b>			
Iron, pig .....	157,344	85,239	187,565
Bar, bolt, and rod .....	2,366	2,262	3,476
Cast .....	20,407	7,312	11,004
Wrought .....	78,065	69,474	75,784
Steel .....	22,830	21,792	22,249
Copper .....	29,618	30,890	46,093
Sheets, malleable .....	37,333	31,840	51,421
Other sorts .....	7,572	5,060	8,268
Brass .....	3,533	4,271	8,671
Lead .....	3,861	8,574	11,595
Tin .....	16,103	7,359	7,760
Plates .....	45,969	28,007	67,236

The exports of foreign and colonial merchandise show an increase, as compared with last year, in the articles of cotton yarn, indigo, embroidery, and needle-work; guano, wet hides, leather manufactures, opium, quicksilver, raw silk, silk broad stuffs, brandy, refined sugar, tobacco, sheep's wool, and woollen manufactures; whilst there is a decrease in cocoa, coffee, dry hides, metals, palm oil, spices, rum and Geneva, raw sugar, &c.

#### LATEST CURRENT PRICES OF METALS.

LONDON, MARCH 8, 1850.

Bar, bolt, square, London .....	£5 15-6 0	Tin .....	487 10 0
Nail rods .....	6 15 0	Old copper .....	per lb. 8 1/2
Hoops .....	7 15 0-8	Yellow Metal Sheathing .....	8 1/2
Sheets (angles) .....	8 10-8 15	<b>FOREIGN COPPER.</b>	
Red metal, Wales .....	3 0-5 5	Russian, P.S.I. .....	15 0 8
Do. anthracite .....	3 15 0	<b>ENGLISH LEAD.</b>	
Pigs in Wales .....	3 5 0	Pig .....	per ton 18 0-18 10
Do. do. forge .....	3 15 0	Sheet .....	19 0-19 15
Do., No. 1, Clyde .....	4-2 5 6	Red lead .....	19 10 0
Blevitt's Patent Refined Iron .....	3 15 0	White ditto .....	25 0 0
for bars, rails, &c., free on board at Newport .....	3 15 0	Patent shot .....	21 0 0
Do. do. for tin-plates, boiler plates, &c., ditto .....	4 10 9	<b>FOREIGN LEAD.</b>	
Stirling's Patent in Glasgow .....	2 17-3 0	Spanish, in bond .....	17 0-18 0
Toughened Pig in Wales .....	3 10-13 0	American ditto .....	—
Staffordshire bars, at the works .....	6 0 0	<b>ENGLISH TIN.</b>	
Pigs in Staffordshire .....	3 0 0	Block .....	per cwt. 4 5 0
Rails .....	3 5-7 6	Bar .....	4 6 0
Chafers .....	4 0 0	Refined .....	4 11 0
<b>FOREIGN IRON.</b>		<b>FOREIGN TIN.</b>	
Swedish .....	12 10-13 10	Banco, H.C. .....	4 2-4 4
CNDR .....	—	Rail, for Export only .....	4 0 0
PSI .....	—	Strails .....	4 0-4 1
Gouffier .....	—	<b>TIN-PLATES.</b>	
Archange .....	—	IC Coke .....	per box 1 8-6 1 9
<b>FOREIGN STEEL.</b>		IC Charcoal .....	1 13-1 14
Swedish keg .....	14 5 0	IX ditto .....	1 19 0
Ditto faggot .....	14 5 0-15	<b>SPELTEN.</b>	
<b>ENGLISH COPPER.</b>		Plates, warehouse .....	per ton 16-17 0
Sheets, sheathing, & bolts, &c. .....	0 0 10	Ditto, to arrive .....	16 5-16 10
Tough cake .....	per ton 58 10 0	<b>SILVER.</b>	
<b>TERMS.</b> —a, 6 months, or 24 per cent. dis.; b, ditto; c, 6 ditto; d, 6 months, or 3 per cent. dis.; e, 6 months, or 24 per cent. dis.; f, ditto; g, ditto; h, ditto; i, 6 ditto; j, net cash; k, 6 months, or 3 p. ct. dis.; m, net cash; n, 3 months, or 1 p. ct. dis.; o, ditto; l, dis. Cold-blast, free on board in Wales.		<b>QUICKSILVER.</b>	
		English sheet .....	per ton 21 0-22
		Quicksilver .....	per lb. 4s. 4d. 6d.

**REMARKS.**—English iron, though a little lower, is steady; Swedes very scarce, and likely to be so for some time.—Swedish steel is dull of sale.—Copper firm, but with small business.—Tin looks somewhat better.—Lead is in demand, and expected to rule higher still.—Spelter steady, with small transactions.

**MONTHLY REPORT.**—The demand for Welsh bar-iron has become very slack during the past month, and in Scotch pigs there has been a decline of full 5s. per ton.—Lead has risen 20s., and seems likely to be dearer.—East India tin sorts are flatter and lower, but English tin is un



## Current Prices of Stocks, Shares, &amp; Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.	
Bank Stock, 7 per Cent., 207½	Belgian, 4½ per Cent., 90½
3 per Cent. Reduced Ann., 95½	Dutch, 2½ per Cent., 55½
3 per Cent. Consols Ann., 95½	Brazilian, 5 per Cent., 89½
3 per Cent. Ann., 94½	Chilian, 6 per Cent., 100½
Long Annuities, 8½	Mexican 5 per Cent., ex Coup., 29½
India Stock, 10½ per Cent., 268½	Russian, 5 per Cent., 106½
3 per Cent. Consols for 13th Mar. 95½	Spanish, 5 per Cent., 17½
Excheq. Bills, 1000l., 1½d. 55½	Ditto 3 per Cent., 36½

**MINE.**—An average amount of business has been transacted this week, and the accounts from the mines generally are of a most cheering character.

In Devon Great Consols several shares have changed hands at an advanced price. Treviskey and Barrier have been in demand, and business done at a considerable advance, arising from some very important improvements.

Condurow, East Pool, South Bassett, and South Tolgus, have also been in request. Herodfoot is represented to have improved, especially in the 94 north, and the 82 south.

There has been an inquiry for Tincroft, and several shares have changed hands at an advance. Since last week's report a very important and valuable discovery has been made; in driving a cross-cut north from the 80 ft. level, they have intersected a new lode (now called Grant's lode), and from the last account they have driven 5 feet into it, and no appearance of the north wall. The lode is estimated as worth from 50l. to 60l. per fm. A cross-cut has also been commenced in the 70, to intersect it at that point. At North Tincroft engine-shaft, sinking under the 100 ft. level, the lode is 7 ft. wide, worth 35l. per fm. Other parts of the mine continue productive.

In Great Rough Tor Consols an important improvement has taken place; in driving a cross-cut in the 45 ft. level east, they have intersected a large and productive lode, having every appearance of further improvement.

Among the several improving mines in Wales, we may notice Esgrail Lee, Daren, Court Grange, Llwynmales, East Daren, &c.; and we learn that Penybanc and Englod Mines have been taken up by an influential company, with a view of working spiritedly.

At North Friendship they have discovered a very productive lode, now rich for lead; this discovery will prove highly advantageous for Kingsett and Bedford, as the lode runs through the latter sets for 400 fms.

At Wheal Comfort meeting, a dividend of 3l. per share was declared.

At South Frances usual bi-monthly meeting, a dividend of 12l. 10s. per share was declared for the months of December and January; leaving a balance of 1158l. to credit of next account. A profit of 1775l. 10s. was made on the two months' working; and the mine is represented as being in a highly gratifying position.

The Gogman Mines declared the usual bi-monthly dividend of 500l. for December and January, being 5l. per share, payable at the offices of Messrs. John Taylor and Son.

At North Wheal Friendship meeting, the accounts for three months were audited, and a balance of 126l. 17s. 9d. found in favour of the mine; but, in consequence of some heavy law charges attendant upon the preparation of the leases, a call of 10s. per share was made, for paying off the same.

At East Wheal Rose meeting, a dividend of 15l. per share was declared.

Wheal Russell account for three months, was held on the 21st Feb., when a balance of 336l. 1s. 5d. was shown against the adventurers, and a call of 10s. per share was made.

At the East Buller bi-monthly account, a balance of 410l. 3s. 8d. was due to the pursuer, and a call of 1l. per share was made.

At the meeting of South Wheal Josiah, the accounts showed balance in favour of adventurers (supposing all calls paid) of only 98l. 6s. A tardy act of justice to the honest adventurers was resolved on—that of absolute forfeiture of all shares on which exist outstanding calls. When it is considered how many highly promising undertakings have been eventually "knocked," from indecisive conduct in this respect, it is to be hoped the managers of this mine will not subject themselves to censure, should such fate result on their proceedings.

At Great Work meeting, the profit on the workings of Oct., Nov., and Dec., allowed a dividend of 10l. per share being declared.

At the Llwynmales bi-monthly meeting, the accounts showed balance of 118l. in favour of adventurers. The report from the mine is highly favourable, upwards of 20 tons of lead being ready for sale, and 20 more were expected to be ready by the first week in March. The steam-engine will be completed by the 1st May, when the returns will be considerably increased. An improvement has recently been made, by the discovery of a lode 14 in. wide, solid lead.

A few weeks since, we noticed the discovery of a rich vein of lead near the surface at Landinaph, which attracted considerable attention at the time. We are able to give the following state of the progress being made:—"Wymond's shaft has been sunk 6½ fathoms, on the course of the lode; the lode is full 4 ft. wide, composed of rich silver-lead ore, prisms, quartz, and a few spots of manganite. The rocks of lead ore are from 55 to 100 lbs. in a rock; and the underlie of the lode is 2 ft. 4 in. per fathom; the walls are perfectly regular, without a warp."

A report from Penzance, in giving a summary of business transacted in the locality, states that Botallack shares have been in request, and done at an advance; Wheal Reeth had improved in price; West Wheal Treasury had very considerably improved. In Penzance Consols a large amount of business has been transacted, and the mine is represented as in a very productive and highly promising position. An ineffectual attempt had been made to amalgamate and work conjointly the Boswiden and Nanpan sets. The mines in the neighbourhoods of Redruth, Illogan, and Gwennap, are stated to be looking remarkably well, and mining generally was in a gratifying and encouraging position. The failure of Messrs. B. Smith and Son, of Bow, copper smelters, was announced on Wednesday last. From inquiries which we have made, we do not learn that any of our home mines are likely to suffer.

Shares in the following mines have changed hands since our last:—Devon Great Consols, Treviskey and Barrier, South Bassett, Alfred Consols, Condurow, Trelawney, South Tolgus, Tincroft, Drake Walls, Penderves, Penzance Consols, Esgrail Lee, Trethellan, Mary Ann, Sharp Tor, Daren, West Wheal Treasury, Gustavas, West Providence, East Buller, Wheal Henry, Stray Park, Tremayne, Keswick, West Tolgus, Kirkcudbright, Callington, Herodfoot, &c.

In Foreign Mines, the chief business has been in United Mexican, Copiapo St. John del Rey, and Linare, in which a fair proportion has been done.

The Copiapo report for November has been received. The Checo and San Pedro Copper Mines continue productive; in the latter an improvement had taken place. The produce for the month, from the two mines, is given at 54 tons. The silver mines of Al Fin Hallada and San Jose del Carmen are producing some rich silver ore; whilst those of Carmen Alto and Plomiza contain an extraordinary rich vein, producing 13 carmen per cajon. The mines of Santa Anna, Colorado, and Merceditas, are spoken favourably of; but the want of labourers to prosecute the operations appears to be severely felt. The gold mines hold much promise also.

Advices have been received from the Linare Mines to the 27th ult., and the operations are represented as continuing to progress highly satisfactorily; and an improvement had taken place in one of the pitches, now worth 4 tons to the fm.

**COMPANY OF COPPER MINERS IN ENGLAND.**—There is every probability that the arrangements for the reconstitution of this ancient company will shortly be definitively settled. A meeting of debenture-holders was held at the offices on Thursday, the 6th inst., when a committee from that body was appointed to act with the shareholders. As the bill to amend the constitution of the company has already been read a second time, it is confidently expected that all arrangements will be matured, in order to be laid before the annual meeting, which will take place early in the ensuing month.

**RUSSIAN GOLD.**—In another column, we insert some particulars respecting the product of the precious metals in Russia, which will be perused with interest. We also find it stated, in the continental papers, that in consequence of the great quantity of produce extracted from the Ural Mines, the Emperor of Russia has, by an Ukase, recently established at Cronstadt an Imperial entrepot for the deposit of metallic productions, consisting of gold. Since the receipt at St. Petersburg of large accessions of the precious metals, there remained in the entrepot of that capital a very large aggregate—the produce of the mines of the Ural and the Lena. The amount named is 400,000,000 of gold, silver rubles of the value of less than a shilling each (say, 9d. or 10d.), making a sum of 15,000,000l. sterling, being, we presume, the coin in which it is estimated.

**CONTRACT FOR COALS FOR THE MEDITERRANEAN.**—The commissioners of the Admiralty will receive on the 19th inst., tenders for delivering at Gibraltar 2600 tons of coal, and at Malta 12,000 tons, for the service of her Majesty's steam-vessels.

**SALE OF MINING SHARES.**—The shares in the Callington Mining Company, submitted to sale by auction, at the Mart, by Mr. C. Warton, on Wednesday last, realised as follows:—Two shares, on which 25l. each had been paid, sold at 4l. 10s. per share; two lots of five and ten shares, 4l. 7s. 6d. each; one lot of ten shares, 4l. 10s.; two lots of ten shares, 4l. 12s. 6d.

**ARRIVALS OF SILVER COPPER, &c.**—The following arrivals took place on Monday:—The vessel *Souda*, arrived in the docks from Hong Kong and Whampoa respectively, brought from the former place 38 boxes of silver, consigned to order; the vessel *Isabella Dwyer*, from the Mauritius, a case of bullion, addressed; and the ship *Stately*, arrived from Coquimbó and Valparaiso, has brought the very large quantity of 66,928 ingots of copper, consigned to an eminent firm in the metropolis.

## PRICES OF MINING SHARES.

BRITISH MINES.		BRITISH MINES—continued.	
Share.	Company.	Share.	Company.
1000 Abergwesin	9 6	2048 Kinnaird Combe Tin	15 3
1024 Alfred Consols	9 10	9000 South Tamar	19 3
1024 Arundel	9 10	128 South Caradon	5 3
1024 Astbury United Mines	9 10	1100 South Dolcoath	5 3
1024 Balacon	9 10	256 St. Francis Wh. Ann	30 20
128 Balacon Consols	9 10	1024 South Molton	7 12 13
903 Barristown	3 4 5	300 South Plain Wood	1 3
3630 Bawden	4 4 4	256 South Tolgus	15 130 35 40
6000 Bealbury	1 1	256 South Trelawney	20 1
4000 Bealbury	5 5 4	2000 South Wales Mining Co.	1 1 12
1280 Birch Tor & Vitrer	10 6 7	128 South Wheal Bassett	20 1
9000 Black Craig & Grogan	3 3	128 South Wh. Francis	160 360 90 400
3000 Blackdown	3 3	1000 South Wh. Josiah	2 3 4
5000 Blandford Consols	1 4 4	1000 South Wh. Maria	2 1
1024 Bodaly Consols	3 3 3	1000 Southern Western, Irish	2 1
5000 Bodaly Moor Consols	1 3	280 Spearmoor	30 40
60 Bosora	4 4 7	94 St. Ives Consols	80
100 Botallack	18 2 30	128 St. Michael Penkivel	5 10 1
130 Brewer	5 2 4	999 St. Mervin Consols	1 3
10000 British Lion, New Regts.	12 5	9000 Stray Park	43 96 27 1
10000 British Lion, Old Regts.	10 10	9000 Tamar Consols	3 3 3
2400 Bryn Arian	2 2	1024 Tary Consols	1 1 1
107 Budnick Consols	5 2 12	10240 Tavistock Consols	60 3 1
10000 Callington	22 5	1024 Tincroft	7 12 13 1
10000 Camborne Consols	7 3	58 Tokenbury	170 10
30000 Cameron's Steam Coal	7 1	240 Tolcarne	8 17
256 Caradon Mines	22 10	5000 Tregaron	1 1
256 Caradon W. H. Houghton	21 4 4	256 Trehane	31 7 8
1000 Carn Brea	15 120	5000 Trehellian	14 32 33
1000 Carnwath Consols	14 7	2000 Trevaunance	5 2 3
113 Carnwath	220	1500 Trehavenny Lime Quarries	2 3
500 Cambrian	5 4 4	56 Trevaunance	10 95
128 Cornport	45 71	120 Trevelian	5 3
256 Condurow	40 125 130	120 Treviskey and Barrier	130 215 220
10000 Cook's Kitchen	14 7 8	128 Treviskey Copper	1 1 12
10000 Cosmopolitan Valley Quarry	5 3	1000 Tyliwaga	3 2 3
10000 Copper Bottom	7 1	2000 United Mines	30 150 150
9000 Court Grange	9 10	256 Wellington Mines	23 15
212 Craudock Moor	20 1 5	128 West Buller	10 415 450
128 Cragg Drains	120 30	256 West Caradon	20 95
5000 Cwrtiwin	12 1	512 West Fowey Consols	40 12
10000 Cwm Eryn	4 4 4 5	1024 West Par Consols	5 3
10000 Daren	3 3	256 West Polgoth	5 3
7100 Darnley	10 10	512 West Providence	5 16 17
502 Davros-Courtenay Cons.	14 2 2 1	2000 West Seton	45 150
1024 Devon Great Consols	1 220 225	120 West Trelawney	45 150
10000 Dhuaford	3 3	512 West Wheal Francis	13 8 4 9
182 Dolcoath	30 20	256 West Wh. Friendship	9 8 8
2560 Drake Walls	30 34	3845 West Wheal Jewel	12 2 2 3
10000 Durnham County Coal	45 9	256 West Wheal Tolgus	80 10
30000 Dyringwin	10 15	256 West Wheal Treasury	27 15
10000 East Avenue	5 1 3	1024 Whiddon Mines	4 12 1
2500 East Birch Tor	3 3	5200 Whiddon Copper	30 150
1024 East Buller	2 5 6	107 Wheal Adams	130 150
112 East Caradon	47 47	1000 Wheal Agar	1 1
2014 East Crowdale	7 1 1	256 Wheal Albert	10 1
4000 East Gwinn Lake Jane	3 1 1 1 1	240 Wheal Anderson	28 9 10
128 East Pool	15 60 60	128 Wheal Ann	50 1
9000 East Tamar Consols	10 12 13	512 Wheal Anna Maria	7 4
256 East Tolgus	15 4 4	1024 Wheal Bal	5 10
94 East Wheal Croft	125 3	320 Wheal Brea	11 10
128 East Wheal Rose	50 520	324 Wheal Cuckoo	9 20
— East of Scotland Iron Co.	5 1 1	2 8 Wheal Courtenay	20 23
128 East Wheal Seton	14 10	182 Wheal Elizabeth	9 16
1280 Esgrail Lee	2 4 5	256 Wheal Fortescue	15 12 13
494 Exmoor Wh. Elizabeth	11 10 12	100 Wheal Friendly	70 66 1
248 Fowey Consols	40 45	388 Wheal Gwennap	27 11 12
1024 Frelud Llwyd Mines	14 3 4	1000 Wheal Henry	3 3 4
256 Gwennap	41 34	1024 Wheal Lawrence	3 3 4
4000 Gen. Mining Co. for Ireland	14 1 1	112 Wheal Margaret	79 200
2500 Georgia Consols (Tin)	2 1 1	512 Wheal Mary Ann	5 37 38
256 Gwennap	44 16	5000 Wheal May	5 4 4
128 Gwennap	4 2	360 Wheal Oak	25 1 5
256 Grambler & St. Aubyn	30 6	3000 Wheal Penhal	12 6
96 Great Consols	1000 250	120 Wheal Prospect	4 7
512 Gt. Wh. Rough Tor Cons.	24 18 20	120 Wheal Reeth	41 150
6000 Gwennap Consols	5 3 3	128 Wheal Rose	60 3
1024 Gustavas Mines	3 3 3	128 Wheal Seton	107 240 50
256 Hawkmoor	12 70	1066 Wheal Sarah	4 7
6000 Illogan Down Cons.	21 3 4	180 Wheal Sisters	35 5
1500 Henneck Silver Lead	18 5 5 4	112 Wheal Sophia	5 5
4000 Henneck Iron & Tin	21 21 1	512 Wheal Spurne	10 60
512 Herodfoot	7 14 13	128 Wheal St. Ann	30 35
10000 Holmhead	12 13	556 Wheal Trevelian	10 10 12
10000 Keswick	10 10	256 Wheal Trevaunance	7 1 1
1024 Kingsett and Bedford	14 4 4	256 Wheal Tryphena	40 80
787 Kirkcudbrightshire	8 5 5 4	1000 Wheal Vincent	5 8
2018 Lamerhoe Wh. Maria	9 4 3	128 Wheal View (Pernan)	14 1 1
256 Lamerhoe Consols	9 4 3	184 Wheal Vvyan	5 60
256 Lelant Consols	47 26 26		
10000 Levant	17 9 10		
10000 Llwynmales	9 10		
3500 Llyanvi Iron	50 50		
253 Lostwithiel Consols	23 10		
6000 Marke Valley	10 1 1		
5000 Mendip Hills	34 3 3 4		
128 Metha	34 3 4		
20000 Mining Co. of Ireland	7 5 5 4		
256 New East Gwennap	41 3 4		
1000 North Pool	45 500		
140 North Roskear	51 150		
252 North Wh. Lelant	14 2		
19000 Northern Coal Co.	23 2		
128 Par Consols	55 650		
1026 Penderves Consols	2 5 6		
128 Pengelly Tin	1 3		
9000 Penant & Craigwen	25 5		
1024 Penybanc and Englod	5 5 4		
1024 Penzance Consols	22 3 4		
512 Plymouth Wh. Yeoland	61 6		
2500 Rhoswiddall & Bacheiddon	10 10		
10000 Rhymer Iron	50 13		
10000 Ditto New	7 6 1		

## RAILWAY TRAFFIC RETURNS.

Names of Railways.	Length.		Present actual cost.	Price p. share	Div.		Traffic Returns.	
	1850	1849			1850	1849		
Aberdeen	57	16	1,000,547	12	—	£823	401	
Belfast and Ballymena	37	37	514,968	17	5	454	103	
Birkenhead, Lancashire, & Chesh.	19	19	1,088,804	37	5	954	387	
Bolton, Blackburn, & West Yorksh.	14	—	266,384	54	—	430	364	
Bristol and Exeter	85	75	2,660,490	62	3	3345	—	
Caledonian	160	141	5,493,320	118	3	5760	4548	
Chester and Holyhead	100	84	3,308,217	103	4	1322	1056	
Delaware and Jersey	35	35	78,565	37	—	786	718	
Dublin and Drogheda	10	10	89,919	—	6	804	921	
Dublin and Kingstown	7	7	39,915	—	6	804	921	
Dundee, Perth, & Aberdeen Junc.	50	47	144,554	84	3	1002	944	
East Anglian (Lynn to Ely)	91	67	1,247,446	11	—	717	750	
East Lancashire	75	84	2,528,619	91	5	3071	1973	
Eastern Counties and Norfolk	322	295	12,327,069	78	5	14209	13378	
Eastern Union	95	80	1,782,703	44	—	1812	1123	
Edinburgh and Glasgow	57	59	2,923,199	27	4	2917	3246	
Edinburgh and Northern	78	34	2,241,276	7	2	2112	1756	
Glasgow, Paisley, and Ayr	104	74	2,574,330	52	3	2771	2368	
Glasgow, Paisley, & Greenock	23	23	852,846	12	2	518	483	
Gt. Northern & East Lancashire	143	—	5,128,756	8 5	5	2913	1600	
Gt. Southern & Western, Ireland	1884	1104	1,867,042	59	4	3920	3268	
Great Western	220	206	4,867,042	43	5	1123	1123	
Lancaster and Carlisle	90	70	1,476,102	53	2	3039	1371	
Lancashire and Yorkshire	220	127	10,063,562	43 5	3	12091	11425	
Liverpool, Crosby, & Southport	13	—	84,455	3	—	86	84	
London and North Western	478	428	96,231,635	104 1/2	5	42024	36436	
London and Blackwall	34	4	1,299,675	38	1-12	601	403	
London, Brighton, & South Coast	170	162	6,502,600	80 1/2	4	7465	7614	
London and South-Western	221	194	7,874,239	65 4	3	8307	8973	
Londonderry and Enniskillen	14	14	186,759	10	—	125	—	
Manchester, Sheffield, & Lincolnsh.	157	94	6,596,260	13	5	5129	2932	
Midland Company	483	423	15,133,779	39 1/2	40	20505	19730	
Midland Great Western (Irish)	50	36	725,332	24 3/4	3 1/2	1007	1138	
North London	36	—	486,243	—	6	—	—	
North British	135	83	3,649,055	9 1/2	3	3170	3524	
North Eastern	454	434	13,326,138	14 1/2	5	1266	915	
North Eastern Central	48	23	969,518	10	—	1192	1292	
North Western and Chester	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	969,518	10	—	1192	1292	
North Western	48	23	9					



## NOTICES TO CORRESPONDENTS.

\* \* We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

"J. E." (St. Alban's).—Read the specification of Mr. Obed Blake, of the Thames Plate Glass Company, for improvements in ventilation, as published in the *Mining Journal* of July 29. Information as to cost and method of procuring patents can be obtained of Messrs. F. W. Campin and Co., the Patent Office, 210, Strand, who will forward an official circular.

THE DEVON GREAT CONSOLS.—In Mr. Murchison's descriptive paper, in last week's *Journal*, 3d column, 9th line from top, for "trilobites," read "trilobites."

FLUCTUATIONS AND MISREPRESENTATION IN MINING PROPERTY.—See: Under the heading of "Notices to Correspondents," in last week's *Journal*, you make certain observations relative to the fluctuation and misrepresentation of mining property, and particularly instance the case of the Harmony and Montague Mines, in terms that might be prejudicial to the future working of these mines. It is true that a large sum of money was raised for the working of these mines, and great expectations held out of success in the year 1835 or 1836, and that the result was unfavourable. But the question should be, was that result fairly to be attributed to the worthlessness of the mines, or to the badness of the management? It will hardly be credited that a sum of £1,000,000 was expended upon the workings, aided, too, by the discovery of several valuable bunches of ore, and that the mines were actually not sunk an additional foot. In depth, the whole of the cost having been expended in the upper levels. The mines at the present moment are only down to the 50.—A CORRESPONDENT: *Pontbridge, March 5.*

"A Reader" (Beverley).—We know nothing of the Anglo-California Gold Mining and Dredging Company, or of the parties concerned—apply to some respectable mine agent.

"A. G." (Dundee).—See an article on Parry's Compressed Air Locomotives in this day's *Journal*. A detailed description of the invention has already been given.

"J. A. H." (Gateshead).—The communication shall appear next week—when the request of "W. Y." (Bank-buildings) will also be attended to.

"M." (Lynn).—Apply to Mr. J. Sims, engineer, Tavistock, who has just made some important improvements in the domestic cooking stove—so that it may be more quickly and readily heated, and this process may be repeated even six or seven times, in fuel—which, we understand, is very highly spoken of.

A description of the Wind Machine for Mines appeared in the *Mining Journal* of the 22d September, 1849.

"An Old Subscriber" (Lancaster).—There are several recipes for blue ink; the following has been recommended:—Aleppo galls bruised, 3 lbs.; green vitriol, 14 ounces; powdered gum-arabic, 10 ounces; bruised indigo, 6 ounces; soft water, 24 gallons. The galls and indigo are to be boiled until the water is reduced to 2 gallons, then add the remaining articles; put the whole into a convenient vessel, stirring it several times during the day for 14 or 15 days—then strain it, and it will be fit for use.

"An Enquirer" (Broad-street).—The gold mines of Yagui, in Chili, are worked by Americans. The pay of the miners is about \$25 per month. The ore dressing is thus described by an eye-witness:—When the ore is brought to the mill, it is ground into an impalpable powder: the process of washing removes all the lighter particles, and amalgamation finally secures all the gold-dust. The washing, when described, sounds a very simple process, but it is beautiful to see how the exact adaptation of the current of water to the specific gravity of gold so easily separates the powdered matrix from the metal. The mud which passes from the mills is collected into pools, where it subsides, and every now and then is cleared out, and thrown into a common heap. A great deal of chemical action then commences; salts of various kinds effloresce on the surface, and the mass becomes hard. After having been left for a year or two, and then re-washed, it yields gold, and this process may be repeated even six or seven times, but the gold each time becomes less in quantity, and the intervals required (as the inhabitants say, to generate the metal) are longer. There can be no doubt that the chemical action already mentioned each time liberates fresh gold from some combination. The discovery of a method to effect this before the first grinding would, without doubt, raise the value of the gold ores many fold. It is curious to find how minute particles of gold being scattered about, and not corroding, at last accumulate in some quantities. An instance of this is related: some of the miners being out of work, obtained permission to scrape the ground round the house and mill. They washed the earth thus got together, and procured \$30 worth of gold. This is an exact counterpart of what takes place in nature. Mountains suffer degradation, and wear away, and with them the metallic veins which they contain. The hardest rock is worn into impalpable mud, the ordinary metals oxidize, and both are removed; but gold, platinum, and a few others, are nearly indestructible, and, from their weight, sinking to the bottom, are left behind. After whole mountains have passed through this grinding mill, and have been washed by the hand of Nature, the residue becomes metalliferous, and man finds it worth his while to complete the task of separation. One rule of these mines appears very harsh, but answers well for the proprietors. The only method of stealing gold is to secrete pieces of the ore, and take them out as occasion may offer. Whenever the major-domo finds a lump thus hidden, its full value is stopped out of the wages of all the men; who thus, without their combine, are obliged to keep watch over each other.

"E. J. C." (Broad-street).—Wheel Alfred Mine was abandoned in 1825; at that period it was under the management of Mr. John Taylor. The present undertaking is not on such an extensive scale as the antecedent. We shall in our next be able to give some further particulars.

James Josse (Turin).—Epidote is a combination of silica, alumina, protoxide of iron, and lime: it is found granular, massive, and in prismatic crystals, variously terminated, and longitudinally striated. Its colour is green, of different shades, occasionally almost black, rarely brown or reddish. It has a shining lustre, and is somewhat transparent. Its primary crystal is a right oblique angled prism, of about 115° 30', and 64° 30'. It cleaves with brilliant surfaces, parallel to the sides and lesser diagonal of the prism. Before the blow-pipe it intumesces, but does not, even by a strong heat, completely melt. With borax it intumesces, and then fuses into a glass coloured by iron, unless manganese predominate, in which case it assumes in the oxidizing flame an amethystine tinge. Epidote is not often found massive, but chiefly in crystals, varying in size from the acicular to near an inch in diameter, and several inches in length. The acicular are met with in the department of Isère, in France, at Bourg d'Oisans, in Dauphiné, in the Alps. The larger occur at Arendal, in Norway, and Normark, in Sweden. It belongs chiefly to primitive rocks, but is only found in veins and masses, among which, in small quantities, it occurs in many countries. Magnesian iron, garnet, felspar, adularia, and asbestos are the minerals which accompany it. Granular epidote appears to be epidote reduced to small grains by attrition. It occurs on the banks of the River Arango, near Muska, in Transylvania, and is called *scoria* by the inhabitants of the country. Magnesian epidote occurs in small prismatic crystals, of a violet or reddish brown colour, which are generally associated in groups, sometimes imbedded in asbestos. It is opaque, and yields to the knife; contains about 12 per cent. of the oxide of manganese, and before the blow-pipe fuses easily into a black glass, and with borax into a transparent one, exhibiting in the oxidizing flame the amethystine tint of manganese. It occurs at St. Marcel, in the Valley of Aosta, in Piedmont, in gneiss, accompanied by oxide of manganese, quartz, and asbestos.

The improved colliery bow and hook, which is adapted for cranes as well as for collieries, as patented by Mr. Stephen Reed, of Newcastle-on-Tyne, can be seen at Messrs. Campin and Co.'s, Patent Office, 210, Strand.

"T. H." (Castleton).—The quotation was an error of the broker's clerk, who had altered the price of pig instead of sheet lead. It should stand thus:—Pig, 177. 10s.; sheet 167. 5s. to 167. 10s.

Received.—"J. E."—"T. R."—"M. J."

\* \* It is particularly requested that all communications may be addressed—

TO THE EDITOR,

*Mining Journal Office,*

26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors

## THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, MARCH 9, 1850.

The *MINING JOURNAL* is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

The *MINING JOURNAL* of the 9th Feb. contained the titles of two motions on the timber duties, made in the House of Commons, by the hon. Member for Bodmin, Mr. WYLD, with reference to the discontinuance of the drawback on timber used in mines, and the repeal of the duty on that used in the fisheries. When the returns thus asked for are made, they will, we expect, exhibit some features not unworthy of consideration. The door was, by these motions, placed ajar. The shipowners, through Mr. MITCHELL, by his motion of Tuesday night for a committee, have thrown it wide open; and the question must now undergo full discussion within a fortnight. Mr. MITCHELL's motion had reference only to "a remission of the duty on all wood used in shipbuilding;" a measure easily reconcilable with a principle of justice, from the moment that the repeal of the Navigation Laws placed the British shipbuilder, charged with heavy duties and freights upon his timber, in competition with the Swede or Prussian, free from those charges. Mr. WYLD took the opportunity, on Tuesday, of advertising briefly to the position of the British miner, with reference to the same question—one which the hon. gentleman discussed, at some length, in August, 1848, when the Copper and Lead Duties Bill was before the House. And it is to be hoped, that the demand so fairly made, on behalf of the British shipbuilder, may also be extended to the British miner.

The drawback of 82 per cent. of the duty on timber used in mines was discontinued in 1842, and on what ground? Why, that the 30,000*l.* or 40,000*l.*, which had been the duty upon timber so used in mines, 82 per cent. of which was remitted in the shape of drawback, should thenceforward attach to the timber thus employed, because—what? Because, in then admitting foreign copper and other ores to be smelted in this country, duties were imposed on those ores, which constituted an ample protection to the home miner. Here we have premises and deductions both set out. In 1848, you withdraw that protection so granted to British ores in 1842, which

was then made the ground of justification for the discontinuance of the drawback on timber. But you do not then reinstate the miner in possession of the advantage of which you deprived him six years before. If the reasoning of 1842 were worth anything, the principle ought to have been applied in 1848; and the removal of the protecting duties on foreign ores should have been accompanied by the renewed remission of the duties upon timber used in mines; which, it cannot be too often repeated, is wholly and irrecoverably lost.

Such is the state of the case; and we hope that Mr. WYLD will make a bold and a determined stand, when the discussion takes place upon Mr. MITCHELL's motion; and that he will demand, on behalf of the miners of England, the restoration of the drawback upon the timber they consume, thereby relieving the Government from the charge, which would otherwise apply to them—that its withdrawal was obtained upon false pretences. In strict justice, under the circumstances, the removal of protection upon the ores should have gone forward, *pari passu*, with the restoration of the drawback upon timber. We shall return to this subject.

Although we have had no particular occasion for some time to advert to the proceedings of the ASTURIAN MINING COMPANY, our friends who have been connected with it need be under no apprehension that we have abandoned their interests, or lost sight of the course which the management is pursuing. It is evident from a circular, the purport of which we gave in our Number of the 23d of Feb., that the new members of the direction, ycleped liquidators, are not tainted with the usual official forgetfulness of opposition principles. The liquidators being, in point of fact, the committee of investigation, have, through their chairman, adopted a resolution in favour of the forfeited shareholders, and no doubt they have well considered its tendency. They have aroused from lethargy the minds of holders of such shares who have either forgotten the very existence and name of the company, or recalled them only to anathematise the delusion which had ensnared them. Probably there are many of those persons to whom that appeal was addressed, who may be excited with the hope of retrieving some portion of their losses, whilst others may be bent on measures of vengeance at any price. To each of those classes severally we propose to address some cautionary observations. We do not raise any question whatever as to the justice of the proposition. It is very probable, that if the views of the present management be effectuated, considerable advantages may be reaped, and a proportionate indemnification realised by those who accept the terms which may, in the end, meet the justice of the case; but we deem it right to raise our voice in counsel, lest, upon such a supposition, any party be drawn into a liability which does not now attach to him. That a proprietor of forfeited shares (where the forfeiture is not collusive) can no longer be deemed a contributory under the Winding-up Act, is now distinctly settled on appeal to the VICE-CHANCELLOR, and, therefore, the grounds put forward by the committee cannot prevail as a reason for adopting their conditions. Then remains the question, whether a person who is now protected from contributing under the Court of Chancery, will use a wise discretion in divesting himself of his shield, which would cover him from an unlimited contribution, and that upon the very questionable consideration of obtaining a contingent benefit, should the company be fairly re-constituted? Viewing the affair from all points, we cannot answer this in the affirmative. To those who are proprietors of existing shares, a different influence dictates the policy of struggling to resuscitate their chances, because they must be declared in any case liable as contributories, and so far as they are concerned, it is immaterial whether their contributions be in or out of the Court of Chancery, provided it be efficacious for the end proposed.

But what if the necessity of an official winding-up ultimately arrives? then will not the forfeited shareholder, should he rejoin the company, be in an infinitely worse position than he is at present? Most decidedly he will. Lawyers' bills, managers' fees, expenses of maintaining establishments, travelling expenses, accountants' charges, proceedings here, proceedings there, issues at law, current salaries, and last, but not least, the fees of court, will eat up the corpus of the estate, together with any superfluous cash which may be, *ad interim*, required of the shareholders. Consequently, we must advise all to consider well before they adopt the alternative of re-appearing in the list of shareholders, and to make the necessary enquiries for ascertaining their security. The other alternative is easy—of acquiescing in forfeitures from which many a present proprietor laments his exemption.

We shall resume the consideration of this subject in our next *Journal*.

In the last Number of this *Journal*, we endeavoured, in a leading article, as well as in another part of our columns, to direct the particular attention of our readers to the result of the recent trial in the Court of Common Pleas—the *ELECTRIC TELEGRAPH COMPANY v. BRETT AND LITTLE*; and considering now the vast importance of the matter at issue in its more extended aspect, and the absolute necessity existing in this age of advancement for a cheap and generally available system of electro-telegraphic communication, which shall be fully capable of meeting the social, commercial, and political wants, not only of the people of these realms, but of the whole world at large, we are induced to resume the subject once more; and, after examining more carefully some few points in the recent trial, pass on to consider the present position and future prospects of this potent instrument of civilisation—this winged messenger of the mind, which modern science has summoned into being, and placed at the command of man. There can be little doubt existing in the mind of any reasonable person, who may have watched the progress of the above extraordinary trial from its commencement to its close, that the true and real object contemplated by the Electric Telegraph Company in bringing their action, was not so much the individual discomfiture of Messrs. BRETT AND LITTLE as the overthrow of competition generally—not so much the recovery of heavy damages in this particular instance as the prospective realisation of enormous profits, by the extension and public ratification of a legalised monopoly, as inimical to the progress of science, as injurious to the best and truest interests of man, as any which has ever yet been favoured by legislative protection. What was the charge brought against the defendants?—that they had infringed the plaintiffs' patent. But in what did that patent consist?—in the transmission of intelligence from place to place by causing electricity to operate upon a certain arrangement of mechanism. This arrangement comprehended the use of six wires, stretched from station to station, and the combined action in every instrument employed of five magnetic needles, and five coils of covered wire. This might have been a very clever and ingenious mode of working 12 years ago; but who, in the name of common sense, would ever dream in these days of using anything so obsolete and expensive?—No one! The plaintiffs are well aware of this; but they are trumping up the charge of infringement as a means to an end. They want, if they can effect it, to monopolise the entire use of electricity for telegraphic purposes; but they will find this a matter of some little difficulty. The discoveries of WATSON, ORNSTED, and AMPERE, the applications of SOEMMERING, RONALDS, and ALEXANDER, and the numerous facts and suggestions resulting from the labours of other contributors, previous to 1837, are not the property of the Electric Telegraph Company; they are the property of the world. The charge of infringement, therefore, refers to matters of mechanical detail; and most certainly the system of working adopted by the defendants is as different, and as far superior to that of the plaintiffs, as it well can be. They dispense with needles altogether, using the more active substitute of a bent magnetic ring. They point to no letters or figures; but they hold the command of a far more extensive series of signs and symbols by employing what is now technically termed the system of counting; and, what is more, they effect all these complicated results by the aid of a single wire. "But (say the plaintiffs) lay not too great a stress upon that point; we can work with a single wire also." If this be indeed the case—as Mr. COCKBURN remarked in his able and eloquent defence—"if, at the time of completing their patent, they contemplated any such improvement as this, they were guilty of a great fraud upon the Crown and the public by withholding the information; for not a syllable of allusion to anything of the kind appears in their specification."

A rather curious circumstance occurred in Court during the progress

of the inquiry. A large-sized model of BRETT AND LITTLE's invention was produced by the plaintiffs. It was manufactured for this special occasion by one of their own witnesses, and was sworn to as a correct representation of that in actual use on the Whitehaven Railway. One of the principles embodied in the plaintiffs' invention, and said to have been infringed by the defendants, was that of loading the needle, or indicator, in such a manner, that the centre of gravity should always lie below the centre of suspension, and so preserve the verticality of the needle, whenever the latter was influenced by an electric current. The infringement was sought to be proved by means of the model, and most assuredly the indicator was there found to be loaded in the manner described; but after a little further sifting, and the adduction of counter-evidence, it turned out that the defendants' arrangement was in reality the very reverse of this; for they invariably placed the centre of gravity above the centre of suspension, and with very great advantage to the working of the instrument. Wherefore this strange deception on the plaintiffs' part?

"Ever note, Lucullus."

There are no tricks in plain and simple faith."

The truth is, the cause itself was rotten at the core, and, as is usual in such cases, abuse took the place of argument. The learned ATTORNEY-GENERAL wished it to be well understood that the various improvements specified in Mr. LITTLE's patent were not Mr. LITTLE's own invention. Nothing of the kind! He had not invented anything. He had availed himself of the confidential communications imparted to him by other people. He had gone about culling sweetness from every flower, with a view to build up the fabric of his own fortunes upon the original ideas of others. In a word, he was nothing better than a betrayer of secrets, a systematic plagiarist, an unprincipled pirate! and he observed that this sweeping accusation rested upon the simple fact, that Mr. LITTLE had at one time been engaged by the company to superintend the construction of some of their instruments! It is a monstrous evil, that in the nineteenth century, such gross, such calumnious imputations should be brought against any one in a public court of justice, upon unsupported possibility and vague surmise. It is a matter of deep and serious regret, that in this high-minded and reforming age, and under the protective panoply of official irresponsibility, the name, character, nobility, and standing of the British bar should be thus bartered away for so much gold; for we vastly question whether the piratical turpitude of Mr. LITTLE would have been rendered so very clear and manifest, had not the learned counsel been induced to inspect it through the distorting medium of a 450 guinea fee. The LORD CHIEF JUSTICE, however, in his clear and luminous summing up, endeavoured to correct any false impression which might arise from this very salient and illogical inference; and he put it to the jury, whether during the period of the defendants' engagement, it was not just as likely that the company should have robbed Mr. LITTLE (who was evidently a clever workman, and a man of inventive capacity), as that Mr. LITTLE should have robbed the company? Altogether it appears to us that this trial is likely to be of much greater injury than benefit to the Electric Telegraph Company. For 12 long years the projectors and promoters have had it all their own way; they have made a capital harvest already, and it is now high time that the public should have a slice of this rich cake. Surely, they can have no reasonable objection to this. Mr. WHEATSTONE will never grumble: he has made some 18,000*l.* or 20,000*l.* by the matter, notwithstanding the anathemas of Mr. FISKALSON. But perhaps Mr. COOKE will grumble, for we believe he holds some sort of interest in the monopoly up to the present time. It is true that, in his arduous for science, he has given up his ordinary avocations; and it is also true that he has not yet realised by this patent much more than 100,000*l.*—that is to say, 54,000*l.* for one part of his share, and 49,500*l.* for another part. Any argument, therefore, in favour of protection which comes from Mr. COOKE must necessarily carry some degree of reason with it; but there are other projectors and proprietors whose justifiable claims upon the public purse are equally deserving of consideration. Truly, one would take these gentlemen for a set of insatiable cormorants, who regard the fish they have already caught as barely sufficient for one good meal. Let it not be thought that we are too severe in our strictures; we speak on public grounds alone.

The present head and prime mover of the Electric Telegraph Company is Mr. RICARDO, M.P., and his views upon the general subject of monopoly were very clearly and forcibly given, on Monday last, at the meeting convened at the London Tavern, Bishopsgate-street, for the purpose of taking into consideration the large powers entrusted to railway companies—powers which practically invest them with the monopoly of the internal carrying trade. We have not sufficient space for the whole of this gentleman's speech, but we give a few extracts:—"He was chairman of the North Staffordshire Railway, but it was only to-day that he had seen the advertisement convening the present meeting, and he at once resolved to attend, and hear the arguments that might be adduced. Having listened to the observations which had been made, he was happy to say that he most cordially agreed in the object sought to be carried by the promoters of this movement; and, as he had taken some part in endeavouring to procure a proper freedom of transit in every way, he did not think it would be incompatible with his position, as chairman of a railway company, that he should desire to see justice and fair play, when it was proved that a monopoly existed in respect to the conveyance of goods by railway. In bygone times, if people felt any objection to travel by one road, they were free to go by another; but now they were compelled to adopt one mode of conveyance, and when once they ensconced themselves in a carriage they were prisoners, and go they must, at whatever price the railway companies choose to charge them. In his opinion, it became the duty of London to bestir themselves, to meet this extraordinary state of circumstances. To be honest with them, he did not agree with all that had been said; but he firmly believed they were adopting the right course to carry out the object they had in view. They must help themselves, or the railway companies would not help them; and it was only by a combined movement such as this, that they could exercise any influence. He was quite willing to lend his assistance to this committee in any way he could."

The company to which Mr. RICARDO belongs has, no doubt, effected a certain amount of good by the extension of the electric telegraph in England; but, in all human probability, a vast deal more would have been accomplished, if private enterprise and ingenuity had been left unfettered. How is it in America? There the invention is worked by license under the patents. No less than forty-five distinct lines, belonging to as many interests, are in full operation; and these embrace a total telegraphic range of upwards of 11,000 miles. The prices charged for communications are about one-eighth of those which are charged in England, and actually less than a 16th of those which are extorted on the South-Eastern line. Passing from America to the continent of Europe, we find the same system of economy operating in the transmission of telegraphic dispatches. In France, it is enacted, in the 6th article of the bill, recently presented by the MINISTER of the INTERIOR, for opening the electric telegraph to the public, that the charge for the transmission of 20 words shall be fixed at 20 centimes per myriametre (10,000 metres); from 21 to 40 words, 35 c.; from 41 to 60, 50 c.; from 61 to 80, 65 c.; from 81 to 100, 80 c. Above 100 words, the dispatches will pay, over the above rate, 2 c. per myriametre for every additional word. In connection with this subject, we may observe that the negotiations now pending with Prussia, relative to the connection of the Prussian-Austrian telegraphic line, are now so far advanced, that, if the Prussian Government consents to open the Breslau Berlin line, which may be immediately expected, a communication will be effected with the extreme telegraph station at Cologne, whereby communication can be carried on from Vienna to Paris in 24 hours. The direct telegraph communication with abroad, which has hitherto been carried on privately with Munich alone, is to be opened generally to private correspondence within a few days, and, no doubt, at equally low rates as those above-mentioned. But we have already carried our observations to some length; and we will, therefore, defer any remarks we may have to make upon the present condition and future prospects of the electric telegraph to another opportunity.

BRITISH ELECTRIC TELEGRAPH COMPANY.—Several petitions in favour of this company's bill, which is now before Parliament, were presented to the House of Commons last evening. Amongst them was one from the Stock Exchange of Liverpool; this petition was signed by upwards of one hundred members of the association.

PLoughing by STRAM.—A trial in this way was made at Grimsthorpe, on Thursday, the 7th inst., by Lord Willoughby de Eresby. It will be sufficient to say that the machinery employed consisted of a small locomotive engine, with a capstan attached, moving on a portable railway. An ordinary plough, followed closely by a subsoil plough, was drawn by a chain from the capstan, working with perfect precision, and at a greater depth and speed than usual. Several gentlemen and farmers who were present expressed a favourable opinion of the experiment. Should the plan be found advantageous, it will be published in full for the benefit of the public.

The greatest Divisions lands to tained management exported Cornwall mines; stated was, how 100 may received, vanishing made some ing to M count them were from guished, the 16th ported in the re quantities in to be was 50s. them not should be the Legi to please this syst discovery industry The th These are at the rat Company Amsterd mines 171 Banca per demand mining annuall board, 48 culated 10s. per cent. of blowing grain tim from stre furnaces 350 of tim year 1688 is impos be. In t 1829, m calculated ment of t In the y the produ ment of was 51. 18 67. 6s. 18 67. 6s. 1809 Owing increased tained; 1 77. 0s. 6d. to 52. 14s. in 1825 it was sol in 1836, 1847, 31. 1 last quot tons; in to 1200 to The quan exported 1451 exp 1847, 23. 8 Great Br The decl in 1846, 1 making a 639,223. 1 total val gum on tries as the Banca tin The cost 136 tons; India, 7; tries to 16,715 cw the duty able to en metal nov tures. In manufacture to release ship, unde it caused manufacture in 1849, 4 be taken it preclud of our nat duty, free will pause ary to the The sm in the min priors;—belonging and Sons; linear, Me Messrs. T [Abstract ion, gentlen Patent doc By a di the patent boilers, and dilling and 1. Imp place, ha beyond w another b At this en ages, for the air in chamber, passes in 2. Imp a crucible. This furn in the bric blowers, t Modified ciples of th The pat puddling nces desc Patent-off



## THE TIN TRADE.

[FROM A CORRESPONDENT.]

The production of tin in the county of Cornwall is well known to be of the greatest antiquity—it being mentioned by Herodotus, who lived 450 years A.C. Divulgor Siculus, who flourished a short period after, supposes the Scilly Islands to be the Cassiterides. It has not, however, been authentically ascertained whether the Phenicians and Grecians interested themselves in the management of the mines in Cornwall, or that they merely purchased and exported the tin after it was raised. The Saxons, who had no authority in Cornwall until after it was entirely conquered by Athelstan, neglected the tin mines; and it was not until after the Norman Conquest that they were prosecuted with any degree of vigour. In the reign of King John, their production was, however, so small, that the farms of Cornwall amounted to no more than 100 marks per annum. According to which valuation, the Bishop of Exeter received, in lieu of his 10th part, the sum of 6l. 13s. 4d.; while those in Devonshire amounted to 100l. yearly. At that period, our miners must have made some progress in their profession, as we find, shortly afterwards, according to Matthew Paris, that a Cornishman, who had fled to Germany on account of a murder, first discovered tin there in the year 1241, from which period the mines of Schonfeld date their origin. About this period, the mines were worked in Galicia and Portugal; but, on the expulsion of the Moors from those countries, this, as well as every other branch of industry, languished, and was ultimately totally abandoned. About the commencement of the 16th century, mention is first made of Malacca tin; but it was not imported into Europe before the middle of the 17th century. In the year 1693, in the reign of William and Mary, the Dutch, who had already imported large quantities from their East Indian possessions, wished that king to allow foreign tin to be admitted duty free into England. At this time, the price in England was 50s. per cwt. The miners immediately petitioned the Legislature, praying them not only to prohibit its entrance, but to make a law that no English tin should be bought under 37. 10s. to 4l. per cwt. Though it was impossible for the Legislature to regulate the price, they wisely opposed the king, who wished to please his Dutch subjects; and protection was prudently retained. Under this system, the Cornish mines progressively increased; and, previous to the discovery of the copper mines, were considered the most important branch of industry in the country.

The tin mines of Banca are said to have been discovered in the year 1710-11. These are in general worked by Chinese. In the year 1776 the metal was raised at the rate of five six dollars the 125 lbs. In the year 1778, the Dutch East India Company brought into Europe 700,000 lbs. of which 100,000 lbs. were sold in Amsterdam for home consumption. The tin sold in Amsterdam between the years 1775 and 1779 amounted, in the whole, to 2,421,597 lbs. The mines of Banca produce now about 9000 tons yearly, although at some periods, when the demand has been great, the production has increased to 3500. The cost of mining and smelting is supposed to be about 40l. per ton: 800 tons of tin are annually produced in the Island of Ceylon, the cost of which averages, free on board, 48l. per ton. The cost of smelting a ton of tin in England has been calculated to be 78l. 17s. 6d.—viz.: 14 ton of ore (say), 75l.; 12 ton of coals, at 10s. per ton, 12l. 6d.; labour, wear and tear of furnaces, &c., 3l. A loss of 5 per cent. of the metal is said to occur in the reverberatory process—that, in the blowing-furnace, is said to be 15. These last are principally used for producing grain tin, or, as it is called by the French, *étain en larmes*, which is produced from stream tin, that from the tinstone forming block tin. The reverberatory furnaces are about 6 ft. by 12 ft.; about 600 cwt. of average ore will produce 350 of tin. Culin is used as a flux; wood was formerly the only fuel; in the year 1680 coal was first used. From the absence of any authentic records, it is impossible to say what the exact production of the Cornish tin mines may be. In the year 1817, 4120 tons were coined; in 1820, 2773; in 1827, 5316; in 1829, 4396; in 1834, 4180; in 1835, 3899. At the present period, it may be calculated that from 6500 to 7000 tons are annually raised; at the commencement of the last century from 1300 to 1500 tons were the average yearly returns. In the year 1750 the returns were about 2800 tons, and the next fifty years the produce varied from 2000 to 3000 tons. The price, since the commencement of the present century, has varied considerably. In the year 1800, it was 5l. 1s. per cwt., and steadily increased until the year 1806, when it realised 6l. 6s. In the two subsequent years, it had a tendency to decline; but in the year 1809, the price was 6l. 2s.

Owing to the war, and the blockade of the continent, from this year it further increased. In 1810 it fetched 7l. 17s. 6d., the highest amount it ever yet attained; 1811, 7l. 11s. 6d.; 1812, 6l. 8s.; 1813, 6l. 14s.; 1814, 7l. 16s. 6d.; 1815, 7l. 9s. 6d. On the termination of hostilities, it fell in the succeeding year, 1816, to 5l. 14s. 6d.; in 1819 it was 3l. 16s. 6d.; in 1823 it had again risen to 5l. 5s.; in 1825 it had fallen to 4l. 9s. 6d.; and at the commencement of the year 1830 it was sold at the rate of 3l. 13s.; in 1832, 3l. 12s. 9d.; in 1835, 4l. 11s. 6d.; in 1836, 5l. 9s. 6d.; in 1839, 4l. 8s. 6d.; in 1840, 4l. 2s.; in 1844, 3l. 13s.; in 1847, 3l. 13s.; 1848, 3l. 19s.; 1849, 4l.; while its present price, according to the last quotation, is 4l. 5s. In 1790, the quantity of British tin exported was 2910 tons; in 1800, 1782 tons; during the war the average exported was about 1000 to 1200 tons annually; in 1825, 1712 tons were exported; in 1830, only 558. The quantities of foreign tin imported were—in 1815, 325 tons, of this 198 were exported; in 1824, 319 imported, 235 exported; in 1825, 211 imported, 235 exported; in 1826, 1460 imported, 1086 exported; in 1828, 1536 imported, 1451 exported. In the year 1846, 20,306 cwt. imported, 21,038 exported; in 1847, 23,307 imported, 11,471 exported; in 1848, 5975 imported, 834 exported; in 1849, 35,545 imported, 8940 exported. The exports of tin, the produce of Great Britain, were—in 1848, tin unwrought, 35,946 cwt.; in 1849, 35,267. The declared value for the last four years, of unwrought tin exported, has been, in 1846, 107,456l.; in 1847, 159,467l.; in 1848, 145,085l.; in 1849, 141,577l., making a total value of 555,584l. That declared on tin plates was—in 1846, 659,223l.; in 1847, 462,890l.; in 1848, 632,142l.; in 1849, 711,649l., making a total value of 2,465,903l. Owing to the prohibitive duties in France and Belgium on tin plates, our manufacturers do not export so largely to those countries as they would under a system less restrictive; a great quantity of the Banca tin is used in the United States.

The countries which imported tin to England last year, was—Singapore, 136 tons; Holland, 74; Belgium, 27; Spain, 21; Peru, 18; China, 15; British India, 7; Cape of Good Hope, 1—making a total of 299 tons. The three countries to which we export the greatest quantity are Russia, France, and Turkey. Of foreign tin 4098 cwt. were entered for home consumption in 1848, and 16,715 cwt. for the same purpose in 1849. There can be no doubt, that was the duty on foreign tin repealed, that our tin-plate manufacturers would be able to enlarge their already enormous trade, as the quantity of unwrought metal now taken by the French and Russians is used for their own manufactures. In spite of the fiscal regulations imposed in those countries, our manufacturers are enabled to compete with them; and were those Governments to release their duties, would in a short period, by their superiority of workmanship, undersell them in their own markets. The repeal of the duty here, while it caused the ruin of our home mines, would be only of benefit to the clique of manufacturers. The gross amount of duty received in the year 1848 was 1498l.; in 1849, 4622l.; being so inconsiderable, that as an article of revenue it cannot be taken into calculation. It is so far important, that so long as this is retained, it precludes the Dutch and others from importing the metal, to the detriment of our native industry. In 1838, the Government, by abolishing the coinage duty, freed the mines from a grievous impost, and it is to be hoped that they will pause before they take from them that protection which is vitally necessary to their well-being and positive existence.

The smelting trade is confined to a few houses, who generally are interested in the mines. The following is the names of the works and their several proprietors:—Calenick, Messrs. Michell and Co.; Carodras and Trelovel, both belonging to Messrs. Daubuz; Charlston House, Messrs. H. I. Enthoven and Sons; Angarrack and Chyandour, Messrs. Bolithos; Trethellan and Mil-liner, Messrs. Williams, Harvey, and Co.; Tamar, Union Company, Bissoe, Messrs. Trenging and Co.

## IMPROVEMENTS IN IRON FURNACES.

[Abstract of Specification of patent granted to Thomas Symes Prideaux, of Southampton, gentleman, for improvements in puddling and other furnaces, and in steam-boilers. Patent dated 30th Aug., 1849; inrolled, 28th Feb., 1850.]

By a disclaimer, entered and inrolled the same day as this specification, the patentee cancels so much of the title of his patent as refers to steam-boilers, and thus reduces the scope of his patent to improvements in puddling and other furnaces; and these improvements he divides into two parts.

1. Improvements in puddling and mill-scrap furnaces. There is a fire-place, having a closed ash-pit beneath, then a bridge, which is hollow; beyond which is the puddling-furnace, or chamber; at the end of which is another bridge, also hollow; beyond which is the chimney of the furnace. At this end of the furnace is an air-pipe, which conveys air to certain passages, formed around the furnace, and through the bridges, by which means the air is conveyed to a chamber, beneath the plate of the puddling chamber, or furnace. The air cooling down this plate, and receiving heat, passes in a heated state to the closed ash-pit to supply the fire.

2. Improvements in iron smelting-furnaces. There is a fire-place, then a crucible, and then a smelting chamber, beyond which is the chimney. This furnace is to have a closed ash-pit, and air passages are to be formed in the brickwork—thus carrying heated air, which is propelled by suitable blowers, to the closed ash-pit.

Modifications of detail are described; but the above comprises the principles of this invention.

The patentee claims the supply of heated air to the closed ash-pit of the puddling or mill-scrap furnace, and the improvement in iron smelting furnaces described.

Patent-office and Designs Registry, 210, Strand, March 8.

## On the Prevention of Accidents in Coal Mines.

The next witness examined before the committee, to whose evidence we now direct attention, was Mr. JOSHUA RICHARDSON, C.E., of Neath. He said he had been established about seven years in the colliery district of Wales, and had previously been a pupil to Mr. R. STEPHENSON, in the north of England, where he had colliery as well as engineering practice. Explosions do not constitute one-half of the loss of life which takes place. From the *Mining Journal*, the only data to be obtained of the number of deaths which take place in mines, it appeared, from the 1st January, 1848, to June, 1849, 798 lives had been lost—346 of which were from explosions. These returns were put in, in a tabular form, and showed that, in North and South Wales, for the year 1848, 116 deaths had occurred—in Staffordshire, 155, while in Northumberland and Durham there were only 33—7 in the former and 31 in the latter. Now, taking the number of men employed, and the quantity of coal raised, it appears that in the counties where the largest quantity is produced the fewest accidents happen. On the state of the Eaglesbush Colliery, before and after the accident of March, 1849, Mr. RICHARDSON stated that he examined the mine immediately after the explosion, at the request of the coroner's jury, accompanying Mr. WAINWRIGHT SMITH, the Government Inspector, on the inspection, and found the air going through the mine was at most 3000 cubic feet per minute. On examining it, after Mr. STURGE's machine was at work, there were about 13,400 feet per minute; the candles burned clearly and well, and there were no indications of fire-damp; formerly it had been found—especially in the further part of the mine, near a fault—that it was so fiery as to be even dangerous to work with the Davy lamp, which soon got red-hot, and the men were constantly coming out to cool them; but on the occasion alluded to there was not the slightest symptom of fire-damp. The air had to be drawn a distance of 1 mile and 5 furlongs. With respect to establishing a system of Government inspection, Mr. RICHARDSON said, that he had heard many opinions expressed by colliery owners on the subject, and he thought a system might be arranged, without exciting much jealousy or objection on the part of those concerned in the management of mines. At first, perhaps, it would be expedient to do no more than report on the subject—afterwards give full powers for inspection, and also to put in operation the existing law as regards open shafts and other circumstances, with the right to examine plans; but at first he thought the coalowners would not quietly submit to very stringent measures.

E. S. BARBER, Esq., C.E., on the subject of Government inspection, gave the following evidence:—

It is a very difficult question, in consequence of the fear that parties would have lost such an officer should divulge the state of the workings to rival parties in the trade. I think that a registry of all mine plans in each district ought to be made, for the purpose of preventing the tapping of water, for instance, in which many lives have been lost, from not knowing the extent of the past workings of an adjoining mine; and I think that such an officer ought to be sworn to secrecy, and that the maps ought to be submitted to him without prejudice. He should have a power, I think, of stopping the workings, in a certain direction, when they approached too near to be safe—too near to the workings of another colliery to the place which probably might contain water. Then, again, he must also see the mine without prejudice, with regard to trespasses, which are frequent occurrences in our district; and I think that he ought to be invested with power to enter on the application of any landowner whose property adjoined, or was in proximity to any colliery or mine; for instance, the lessee of a colliery may take a large tract of any landed proprietor, and a small freeholder has, perhaps, a small property in the middle of a large property; he has no means of going down, unless he has a bill of discovery, which perhaps costs him the value of the coal, and he is a witness to the fact that he has been wronged, and the party has never had an opportunity of arriving at a knowledge of it: the late Sir Wm. Follett held that we had no power, in a case of that kind, to recover—that the statute barred us. I think it would be much more beneficial to the district if the party were so appointed that, on the application of a landowner, he might be empowered to make a survey, and if the party complaining were in the wrong, he would have to pay the costs of the survey.

BENJAMIN GIBBONS, Esq., of Kingswinford, coalowner, stated that he had been engaged 50 years in colliery operations; had several collieries, but only one working in the Staffordshire thick coal, drawing about 100,000 tons per annum; the depth was about 140 yards. He then described the system of ventilation adopted by him, which was published in a small pamphlet in 1846, and which we noticed at the time. The principal alteration he had made was in the airways; witness said—

My air descends the shaft, travels along the working road and face of the workings, and ascends in the excavations of the coal into the air-passage, which is as near to the top of the coal as the nature of the coal will allow. In the sinking of the pit there is a channel cut out, which is bricked and separated from the shaft; the air then travels along the air-head, and comes in at the back of the shaft to the chimney. I have one 30 feet high which is a fire-place, and another about 25 feet high, which may be used during very hot weather, or in times when the wind blows a cold wind, but in the winter time we scarcely ever use it. I would just mention, that by the common means, the ascent and descent of the shafts or cars, or by whatever name they may be called, in which the coal or material is drawn, are very frequently keeping the air in the upcast shaft in a state of disturbance, creating eddies in the air, and interrupting the free passage of the air; whereas, by the principle which I have adopted, this is used for the air-passage alone, and is free from all interruption, so that the current of air which descends travels into the work, ascends and discharges all the foul vapour of the mine at the top of this chimney, without ever having been disturbed at all; it is closed from the air.

This principle had been in use nearly 30 years at nearly all witness's shafts, of which he had 16 or 18. Mr. GIBBONS here read a passage from his pamphlet, to show his opinion of Government interference, as follows:—

It has upon various occasions lately been suggested, that the interference of Government is desirable; but I entirely dissent from this opinion. Any interference in the power of Government could not be efficacious, and must be a constant source of vexation and interruption in the working of the mines. Such interference is contrary to every sound principle; and we have sufficient evidence to prove that the arbitrary interference exercised by the continental Governments has been in the highest degree detrimental. It is self-evident that the workings of a pit, which must be controlled and varied by the different changes that take place in the natural formations of the mines, such as the slips, faults, rises and falls constantly occurring in the thick coal—it is evident that these and many other things could not be brought under any compulsory system of regulations. I do not consider that if a safe system of ventilation can be pointed out, it should not be enforced; it ought to be, and it will be, if it is once proved that it can be, and this will be done by the humanity and good sense of the proprietors, the mine surveyors, and the charter masters; and if neglected by them, it will be compelled by the voice of the public and the workmen. These means will be found infinitely more effectual, and far less objectionable, than any interference of the Government.

Several other gentlemen of eminence as colliery viewers were examined, but as there was nothing in their evidence but what has been remarked upon, we now conclude with the following remarks of Mr. M. DUNN, on a case showing that an inspection would have prevented an awful calamity:—

I have here a map of the Workington Colliery, in Cumberland; I had the management of it up to within 10 months of the deplorable accident which took place in that colliery in the year 1837; the accident was caused by robbing a portion of the pillars underneath the Irish Sea; the pillars were quite adequate to support the roof, although the workings were advancing towards the bottom of the sea; there was at that period abundance of space between the bottom of the sea and the leading workings, but in one part they most injudiciously took away some of the pillars—a crash took place, and down came the sea. The most remarkable circumstance belonging to it is, that some months before this event I had several communications from that quarter, and I submitted those communications to a friend of the proprietor, resident in Newcastle; he communicated with him upon the subject, and advised him to have the matter well investigated, for if the representations he had seen were correct, a calamity would happen. The proprietor did examine into it, but he continued to place confidence in the representations of the person who was managing the work; and he returned an answer, thanking his friend for his interference, but that he was quite satisfied all was going on well. The impending danger, however, was the common discourse of the town and neighbourhood, inasmuch as there had been several warnings, by falls of stones and spouts of water, that the thing would happen. I had my own forebodings, for I knew the colliery; I knew that if the representations that were given to me were correct (and in which I had perfect confidence), nothing else would happen than did happen. If, then, there had been an inspector in the district to whom I could have communicated that correspondence, most undoubtedly he would have felt it his duty to go and examine into all the circumstances of the case; in which case the entire colliery, with all its stock, and the lives of 36 people, would have been saved. A singular thing, also, is connected with it, that there never could be an inquest upon the circumstances of this inundation, because there was never a body obtained, and there never will be, from the extensive fracture of the strata that took place. Of the power of directing that the works in any part of the mine should be abandoned, I speak with great deference. I know if the inspector understood his duty properly, and his attention had been called to it, he would have made a strong protest upon the carrying on of those works in the manner in which they were doing; and it is for your lordships to consider how far (under such pressing circumstances as I have described) it would be prudent or proper to give such power. I have advocated, to a certain extent, that a power should be given for a temporary suspension of certain parts of works, till a disputed opinion between the owner of the works and the inspector was brought before some proper tribunal, which tribunal should examine into all the circumstances of the case, and decide the case upon its merits.

MINING AND RAILWAYS IN SPAIN.—The greatest activity prevails in all the mining districts; and several mines in the Asturias, and other parts, which had been almost entirely neglected for years, are now being got into working condition. Since the alteration in the prohibitive duties on the importation of British machinery, several of the large proprietors of mines have adopted steam-power, which will, no doubt, before long become very general. The new law passed provisionally by the Cortes, in favour of railways, has had a most beneficial effect, by giving a sudden impetus to this speculation, and thousands of men are now hard at work in carrying out these projects, and many of the lines will be completed in the course of this, and the early part of next year. There are few countries where railways will tend more to the development of mining adventures than Spain, which, although abounding in mineral riches, have hitherto remained comparatively dormant, for the want of proper means of conveyance, as in many parts no roads exist, and where they do, they are so bad and expensive for transit, that parties have been deterred from exploring.

MINING IN FRANCE.—The last accounts from St. Dezier and St. Etienne state that the metallurgical industry of France has never been so brisk as at present, and the forge masters are in high spirits; the demand for railway purposes are rapidly on the increase, since the iron proprietors have reduced their exorbitant prices, and that a better understanding now exists between them and railway contractors.

## PARSEY'S COMPRESSED-AIR LOCOMOTIVES.

As this invention has been lost to the public for some time, we deem a brief explanation to be necessary to remove misconception, having formerly expressed our favourable opinion of its merits. A company was formed in 1846 to carry it out, and was registered to "build a large-sized engine, and to test its efficacy," and then to grant licenses for its use. The model was exhibited at No. 5, Pall Mall East, which so completely satisfied the visitors and engineers, that sufficient shares were applied for to enable the directors to give notice that no more would be issued. The office was removed to No. 88, St. James's-street, at the end of March, 1846, when it was lost to the public. In June, 1846, a meeting of the proprietors was called to receive the report of the directors, filled with the highest eulogiums of the "saves they entertained" of "the value, importance, and practicability of the invention," and recommending the capital to be reduced from 400,000l. to 12,000 guineas—the latter sum being sufficient for the limited purpose for which the company was formed; and, further, for the shareholders to take up among themselves additional shares, without again appealing to the public. As only 6569 shares had been paid up, and the directors proposed to double their interest, the proprietors followed the advice, and upwards of 11,000 shares were subscribed for. The Deed of Settlement was signed in Sept., 1846; and the company was completely registered on the 2d Dec., 1846. It was agreed that the experimental engine should be built and tested "within two years from this date." A bye-law of Mr. Parsey's, to construct reservoirs to hold compressed air at high densities, was put in hand in Oct., 1846, but the engine deferred, which occupied till Nov., 1847, to produce; but from bad workmanship, and Mr. Parsey's specified working process not being attended to, he having no control, the vessel was never fit for trial. This abortive experiment formed no part of the legitimate business of the company; but was represented and misconceived by the shareholders to be a failure of the patented locomotive, which was not attempted to be put in hand, or even contracted for. The delay having now brought the company to Nov., 1847, and the preliminary and current office and solicitor's expenses having reduced the funds, as well as the time specified for building the engine, to put a colourable feature on the representations that had been made at public meetings of the proprietors, who were anxious about an engine being built with their money, that the invention was "an utter failure;" that it was only a borrowed idea; and that they were advised that the patent was invalid, and such like insinuations, an action was brought against Mr. Parsey on a covenant in the Deed of Assignment, and the damages laid at 10,000l.

While these proceedings were going on, the proprietors, not knowing the grounds of the action, continued their indifference to the legitimate object, naturally conceiving there must be cause to justify them. Notices of trial and countermands were given by the solicitor of the company, from term to term, till Nov., 1848. As the breach of covenant (on the part of the company) to build an engine by the 2d Dec., 1848, was about to take place, a proposal for a compromise was made in Nov., and finally agreed upon at two meetings of the proprietors, called in March and April, 1849, and the terms proposed to them by the directors for their refusal or acceptance, when the arrangement was agreed to and confirmed, but was not then carried out, as a sufficient number of proprietors, under a clause in the Deed of Settlement, could not be got together to dissolve the company; so an application to the Master under the Winding-up Act was obliged to be made, to carry out the compromise with Mr. Parsey, and to dissolve the company. The terms were that the company should put an end to the action—that the defendant's law costs and compensation should be paid—that the model engine, pumps, and all other machinery, should be delivered up to Mr. Parsey, and the patents re-assigned. These conditions, we are informed, have been strictly fulfilled, and Mr. Parsey being free again, proposes to submit his working machinery to the inspection and examination of all parties interested in improving and economising railway expenditure, from two to four o'clock, on Tuesdays and Fridays, at No. 455, Oxford-street. For patronage in this great undertaking, and for the speedy adoption of compressed-air power, Mr. Parsey relies on the increased comfort it will afford the public, and from the following savings:—From the locomotives not getting over-heated (as with steam), only half the number of engines now used would be necessary, and the expenses of repairs would be decimated; the durability of air-vessels compared with the destructibility of the boiler tubes, &c., of locomotives; the difference of the cost of coke on the engines, and the use of cheap coal in compressing, with many other minor items, making reductions of expenditure, independent of the comparative cost of compressing air and generating steam, which fully justifies profitable anticipations.

## ON THE CONVEYANCE OF GOODS BY RAILWAY.

TO THE SHAREHOLDERS OF THE SOUTH WESTERN RAILWAY.

SIR,—It has often been asserted that the conveyance of goods upon railways is quite as profitable as the transmission of passengers, and this is borne out by the following calculation, made from a contract which Mr. Brassey is prepared to enter into with the directors of the Caledonian Railway, in accordance with a printed notice lately sent round to their proprietors:—

It appears, then, that the contract charge for locomotive power to draw 130 tons is 1s. 2d. per mile, and that, consequently, for 80 miles run, for instance between London and Southampton, or vice versa, the cost would be to the railway company ..... £16 8  
That the charge for trucks or wagons at 4d. per wagon per mile, and taking 28 wagons for the conveyance of 130 tons of merchandise, it would amount to ..... 2 6 8  
Total ..... £19 3 4

At once showing that the whole cost of traction, by contract, including value of machinery, wear and tear, &c., is considerably less than 4d. per ton per mile, and at this price it is fair to presume that Mr. Brassey intends to make a profit; though to get the contract he is willing to pay the Caledonian Company no less a sum than 250,000l. for their plant, in addition to which a reduction in the contract is to take place after a run of 23,000 miles. No wonder then that the committee appointed by the shareholders (if they are aware of this fact) should recommend in their report, as far as possible, everything to be done by contract.

Taking the present enormous charge of 2d. per ton per mile for the conveyance of goods between London and Southampton, say on 130 tons, for 80 miles, would amount to ..... £36 13 4  
Contract expenses, according to Mr. Brassey ..... 7 3 4

Leaving to the railway company ..... 79 10 4  
But deducting the cost of loading or unloading, as at present, 4d. per ton ..... 2 3 4

Actual profit upon a goods' train of 130 tons ..... £77 6 8

Now, if the charge for the conveyance of merchandise were reduced one-half, say from 2d. to 1d. per ton per mile (and then it would be too much), I have no hesitation in saying that the results would be so astounding that the most extravagant notions, as regards development, would fall far short of the reality in an equally short space of time; in illustration of which it is necessary to mention that upwards of 2,000,000 tons of goods are annually passing up and down the English Channel to and from London, a considerable portion of which might be arrested at the port of Southampton if the railway charges were reduced to 1d. per ton per mile, at which rate a sum of 50,000l. per annum would accrue to the proprietors of actual profit on the conveyance of 200,000 tons of merchandise, which at present continues to encounter all the dangers and charges of coming and going round the North Foreland, rather than submit to the double railway charge of 2d. per ton per mile—amounting, in fact, almost to a prohibition. I have it from undoubted authority that, so considerable is the risk of encountering the passage between the Isle of Wight and London, that no less a sum than 400,000l. is lost yearly to the country and to individuals (let alone the loss of life), and that it would be most desirable to save this vast amount of property, if the merchant and shipowner could be induced to avail himself of the position of Southampton, by a reduction of railway carriage upon all water-borne goods, thereby increasing in relative proportion the passenger traffic that would inevitably follow should such a course be pursued.

With London at one end, and the sea at the other, connected as it is, through the agency of steam-vessels of the largest class, with the most distant parts of the world, it is scarcely to be believed, with all these "aids and appliances to boot," that the Southampton Railway Company are only carrying the paltry tonnage of 18,000 tons; whereas, if they were but to pursue a different course, the result would be that their shares would rise on the market 50 per cent. above their present depressed condition, and the directors, instead of fighting and cavilling with their shareholders at the half-yearly general meetings, would be able to meet them with smiling faces and general satisfaction.

London, March 5, 1850.

A MERCHANT.

Gigantic railway bridges are about to be thrown over the Rhine, at Dusseldorf and Cologne; and foreigners, it is said, will be invited to send in contracts for them.

The London and North-Western Railway has a paid-up capital of 17,911,161l.—in addition to debentures amounting to 9,846,133l.=27,757,294l.—The Great Western have a capital of 8,000,000l.—in addition to debentures amounting to 5,596,959l.=13,596,959l.—thus showing these two leviathan companies comprise a capital of 41,294,253l.

ACCIDENT TO THE ELECTRIC TELEGRAPH WIRES.—We understand that yesterday morning an accident occurred, by which about 14 miles of telegraphic wires were thrown down, and the communication to that extent interrupted. We believe the wires were not coiled, as formerly, round fastenings on every fifth post, but were stretched at considerable tension for a length of 14 miles. When a fracture occurred, the extreme tension and consequent sudden contraction of the wire caused it to run out of the grooves, and some of the liberated wire, lying upon the rails, was caught by the wheels of the train, and dragged away from the posts for the remainder of the distance.—*Manchester Guardian*.



## Original Correspondence.

## OPEN SHAFTS.

Sir,—I think that managers of mines should be reminded of their duty—for duty it is—of fencing all shafts, particularly those which are abandoned. Very many deaths have occurred from the neglect of this very trifling labour—some of them of recent date, reported in your Journal. If nothing more valuable than the life of a dog were secured by fencing a shaft, I would have it done. How much more needful, then, when the lives of men, horses, and cattle, are exposed to the danger! I think that, in some of the mine leases, there is contained a covenant, binding the grantees to fence all the shafts on their abandonment. If there is no such covenant, I think there should be, with a penalty for breach of it. In my peregrinations, I observe many such awfully dangerous pits, which circumstance has led me to write this short letter, calling upon mine managers to set a proper value on life.—R. SIMONS: *True, March 6.*

## APPLICATION OF BLAST-FURNACE GASES TO USEFUL PURPOSES.

Sir,—My last letter consisted in a rapid survey of the chronological order of the different experiments on blast-furnace gases effected on the continent, and which have come within my notice. The composition of blast-furnace gases, not only at the mouth but in every part of the furnace, is a subject of the highest interest; the investigation is of a difficult nature, and the analysis of a mixture of different gases very complicated. Those who have confided to their care the management of blast-furnaces will seldom possess the requisite skill and means, and still more seldom the time, necessary to allow them to undertake investigations involving extensive chemical knowledge, and requiring for their accurate performance expensive apparatus and considerable care and attention. Yet I can affirm, from my own experience, that a knowledge of the composition of these gases is highly important in a practical point of view, and that the subject merits the attention even of those who care but little for matters of more scientific interest, but who look simply to practical results. The laws which govern the multifarious phenomena which occur in a blast-furnace are only to be ascertained by a reasoning consideration of the composition of the gases, and every one acquainted with the subject must feel how important it is that we should have an accurate idea of the nature of these laws. As practical men have but little leisure to apply to so difficult a study, they would do well to turn their attention to the labours of those who have, from disinterested motives, undertaken these laborious researches, and principally the excellent memoirs of Messrs. Bunsen, Ebelmen, Scheerer and Langberg, Bunsen and Playfair, &c., to which I strongly recommend attention. The original papers, containing a mass of useful material relating to blast-furnaces, are to be found in *Les Annales des Mines*, *Poggendorf's Annalen*, and the *Report of the British Association*.

I now resume the subject under consideration—viz., the practical application of blast-furnace gases.

The first, and perhaps the most important consideration, is that of the mode of collecting the gases; and to this subject I shall confine myself in the present communication. The gases may be collected in several different ways:—

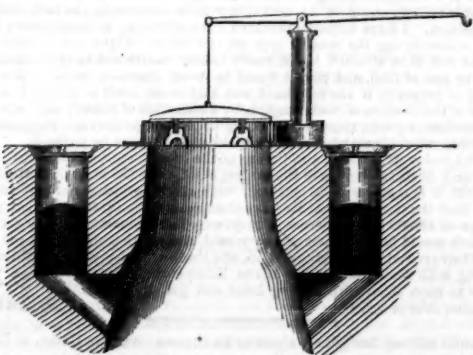
1. By allowing a portion of the gas to escape through several orifices in the sides of the furnace, leaving the mouth open as usual.
2. Allowing the gas to escape in the same manner; but closing the furnace-mouth in the interval between the charges.
3. By plunging in the furnace, to the depth of 6 or 7 feet, a wrought or cast-iron cylinder, called a "trémie," which is of a diameter smaller than that of the furnace, and open at both ends, thereby allowing a portion of the gas to ascend into the annular space between it and the furnace, whence it is conveyed away by one or more orifices—this system, like the previous one, may be used, either with an open mouth, or with one closed by a wrought-iron cover in the intervals between the charges.

And, lastly, the gases are collected in the chimney over the furnace-mouth; the charging doors and the superior orifice of the chimney being carefully closed during the intervals that the furnace is not being charged.

The first method is that adopted by M. Faber du Faur at the Wasseralfingen and New Joachimsthal, and which has since been applied to different furnaces in France and Germany, modifying M. Faber's plan to a certain extent, in placing the orifices much higher up. M. Faber placed them as low down as  $\frac{1}{2}$  of the height of the furnace. This was evidently much too low; at that depth the mass of matter is in a highly incandescent state, and the gases are obviously necessary for the purpose of exerting their reductive influence on the oxide of iron; besides, they are yet highly heated, and, therefore, the loss of heat is very considerable; the gases being drawn off at a point where they are still useful, it is evident that the furnace must suffer, and an augmented consumption of fuel will be the necessary consequence. The furnaces of Wasseralfingen and Joachimsthal are about 32 feet in height; the orifices were six in number, 19½ inches in height by 8½ in breadth, and at about 10 feet from the top; the furnaces produced about 5 tons per diem; the gas collected was sufficient to heat the blast and a finery furnace. This method possesses the advantage of changing very little from existing circumstances; the furnace-mouth is not narrowed, and the method of charging remains unaltered; but it is evident that only a small proportion of gas can be thus withdrawn. A much larger quantity may be collected by closing the furnace-mouth by a cover; but where its diameter is considerable, the management of such bulky covers becomes inconvenient and difficult. I have seen it, however, in successful operation at some works—for example, in the furnaces of Le Pouzin, near La Voulté, on the Rhone.

The furnaces of the Le Pouzin are about 57 ft. in height, and 6 ft. 4 in. diameter at the mouth. The gas escapes through six orifices in the sides of the furnace, whence it is conveyed by an annular reservoir, or canal, in the masonry to the pipe, which carries it downwards. Surrounding the mouth, and at its surface, is an annular cast-iron reservoir, of about 4 in. in width and 8 inches in height, and filled with water. In this plunges the cylindrical border of a wrought-iron cover, moved by a lever, by means of which it can be raised and placed aside; below this cover, and fixed to the furnace, are rails, in continuation of those on the platform. The small wrought-iron waggons, used for charging the furnace, open at bottom; when the furnace is to be charged the cover is raised, and placed aside the wagon, slid rapidly over the mouth, and the doors beneath being opened, the whole of its contents are immediately charged into the furnace. The rapidity with which the furnace is charged is here a point of primary importance, as when the cover is raised but little gas passes into the orifice.

Fig. 1.

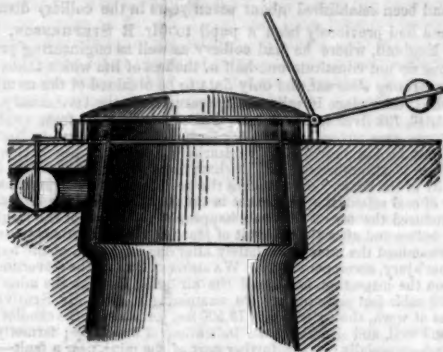


The mode of collecting the gases most generally employed, is that in which the tremie is made use of. The tremie is of cast or wrought-iron, either cylindrical, or slightly larger at bottom; its length is from 6 to 7 ft.; its diameter such that between it and the sides of the furnace is an annular space of about a foot in width. The tremie is supported by a flange, resting on a circular cast-iron plate round the furnace mouth. The gas is conveyed from the annular space by one or more openings. Cast-iron tremies are preferable to those of wrought-iron, not being so apt to burn; I have seen tremies last two or three years, while others have been burnt after nine months' use.

The combined use of the tremie and closed mouth is very frequent; this is the system adopted at the seven furnaces of the large iron-works of Le Creusot. A cylindrical cast-iron tremie plunges to the depth of 6 ft. in the furnace; the gas ascends into the annular space of about a foot in width between it and the sides of the furnace. At the mouth is an annular

reservoir, similar to that already described, into which dips the cylindrical border of a wrought-iron cover, which is turned on its axis by means of a lever and counterpoise; the pressure of the water prevents the escape of gas.

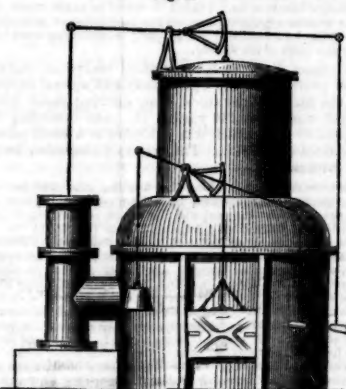
Fig. 2.



The system pursued at Givors is very similar to this, but the furnace is much smaller; the diameter at the mouth not being greater than 4 ft.; instead of a cover raised by a lever, a cast-iron sliding cover is used, and the furnace is charged as at Le Pouzin. The gases are very completely collected at Givors, as the furnace is charged with very great rapidity; though the furnace produces but 10 tons of cast-iron per diem, yet the gas collected produces the steam for a 40-horse engine, besides heating two hot-air furnaces.

The system adopted in the large iron-works of La Voulté and Terrenoire differs essentially from those described above. Here the pipe by which the gas escapes communicates with the chimney, and is at a higher level than the charging-doors; these are closed by cast-iron sliding-doors. The superior orifice of the chimney is also closed by an iron lever, which can be raised, or lowered, at pleasure by means of a lever and counterpoise. An ingenious contrivance is used to prevent any possibility of atmospheric air finding its way into the pipes which convey the gases downwards. The counterpoise of the top cover also performs the office of a sliding valve, for cutting off the communication between the pipes, so that of a necessity it occurs that when the cover at the top of the chimney is open the valve is closed; all accidents are thus prevented, as the workmen are sure to open the cover, otherwise they would risk suffocation from the deleterious gases. Here, as at Le Pouzin, it is a point of the greatest importance to charge with as little delay as possible, as no gas passes while the doors are open. Considering the economical effect obtained, this method is the most advantageous which I have seen in operation; the force which is produced by the combustion of the gases thus collected, is calculated at La Voulté to be about 70-horse power per blast-furnace.

Fig. 3.



The use of blast-furnace gases is universal in France. I have seen the successful working at Le Creusot, La Voulté, Terrenoire, Le Pouzin, Givors, &c. Different methods being employed would seem to indicate that all are open to some objection. Nowhere have I been able to ascertain that any serious explosion had taken place by the formation of detonating compounds in the conveying pipes—an accident the possible occurrence of which has been considered by some as a sufficient objection to the use of blast-furnace gases. I very much question whether it is useful to draw off the gases by a ventilator; they escape with sufficient readiness by their own pressure. I have remarked that, at a depth of 6 ft. in our furnaces, the pressure of the gas is equivalent to that of a column of 3 in. of water; there is thus always a pressure of gas within the pipes, and, therefore, no air can possibly enter. If, instead of using conveyance pipes of large diameter, into which the gas enters by its own pressure, smaller pipes and an artificial draught are used; then the risk of the air entering, and forming explosive compounds really exists, and chances of danger are incurred, which otherwise are not to be feared. I shall, in a future communication, enter into details on methods employed for applying the gases thus collected.—E. MONTEFIORE LEVI: *Ougrée, March 4.*

## MANUFACTURE OF IRON.

Sir,—In one of Mr. Mushet's letters he tells me to fuse oxide of iron, and I will obtain the cinder that I term carbo-oxide, to which I replied, that I thought I should have some difficulty in fusing oxide of iron without an addition of earthy matter, in which case I should find glass; or of carbon, when I should obtain my carbo-oxide. In another letter, Mr. Mushet, referring to cinder, says this impurity, as it is called, is neither more nor less than fused oxide of iron, generated by the high temperature to which the iron is necessarily exposed. I could quote other passages, but consider these sufficient for the occasion.

I beg to observe, that the unconsumed coke in the puddling-furnace, to which reference is made, was not merely a few minute particles, but an entire coating of the fused mass, some of the particles large enough to form cubes more than an ½ in. square; and these, floating on the surface, according to my humble judgment, would be sooner acted upon by a decarbonising influence than combined carbon, enveloped in a dense body like iron. A large proportion of the coke, or sawdust, used in the operation, fused with the oxide of iron, and formed carbo-oxide. I coined this unscientific word to express my meaning of a highly-carbonised oxide of iron—the proportion of carbon to the oxide being greater than to produce either carbonic acid, or carbonic oxide; sufficient oxide of iron thrown into this would, no doubt, disengage one or other of those gases, and leave pure iron. I think Mr. Mushet must admit that finished tin-plate iron is the nearest approach to the pure metal that is produced in the manufacture, and that this is so red-hot, that a smith would have great difficulty in forming such iron into the key of a common door lock. He could only form such an article by re-forging the iron in his smithy fire, producing carbo-oxide on the surface of the metal by the joint action of the oxygen of the blast and carbon of the fuel, and working this carefully into the body of the iron. I no more calculated upon finding a saturated solution of sodium, than I do of supplying blacksmiths with nothing but cinder instead of iron.

Mr. Mushet insinuates that his letter of the 19th inst. will be his last on this subject—so shall this be mine. As I have observed in a former letter, I have had no anxiety to establish a new theory; but having been led to the investigation of the properties of bar-iron, closely watching the customary mode of preparing it, and studying attentively the effect of the different operations, I arrived at the conclusion, that the present make of bar-iron is a mixture, and that some change is called for to suit the peculiar working of iron on railways—my great aim in prosecuting this discussion being to have my opinions refuted or confirmed.

My object now is to produce iron cheaply, as near as may be, in its simple pure metallic state. I have contrived some modes of treatment which would answer well in America, where labour is high, as I should dispense with refiners, puddlers, and ball furnacemen, and the operations could be most effectually carried out by the use of anthracite coal. I have also a new arrangement of furnace for smelting iron with that fuel which was,

some years since, most unjustifiably condemned by the committee of the South Wales Anthracite Association; as well as another valuable invention, in the introduction of which I have met with nothing but continued opposition. I should like much to have an opportunity of exhibiting all these on the other side of the Atlantic, if any Pennsylvania ironmaster would make me a fair and reasonable offer to go out; I calculate their value would be there duly appreciated.—T. H. LEIGHTON: *Feb. 26.*

## GASES FROM THE BLAST-FURNACE.

Sir,—I beg to tender my thanks to your foreign correspondent, "T. M.," for his interesting communication. Since my late father's connection ceased with the iron-works at Seraing, near Liège, I have heard few particulars of foreign works, and have had no opportunity of visiting any. I have not seen Mr. Evan Hopkins's report as quoted—it is probably a private document; but whatever I see proceeding from this gentleman increases my respect for the solidity and variety of his attainments. In geology, especially, his cast of mind appears to supply a desideratum. There is no lack of able geological observers who record facts and maps details, and of theorists—some very theoretical indeed; but Mr. Hopkins unites in his acquirements an acute application of theory, supported by fact, to the action of geological and mineralogical phenomena, which seems to carry him far beyond what has hitherto been attained, and combining science and utility to a high degree of promise.

It is not so surprising as at first sight may appear to "T. M.," that the economy of furnace gases, in common with other scientific improvements, has failed to attract so much attention in this country as abroad. The long establishment of our iron-works on a scale of magnitude, in which, as a school, those who have added to their number have been educated, creates circumstances peculiarly favourable to the perpetuation of antiquated systems. Men of business proceeding out of them have established similar works, merely as matters of business; but it is a different state of things when a people, distinguished as the Germans have been for centuries in the science of metallurgy, set about to erect new works of an important character. The habit of science then takes precedence of the habit of business; and they are at once prepared to bring these more refined resources into play to combat such difficulties as Nature may have imposed upon them. I am happy to see you have another foreign communication in reserve; and am in hopes the brief remarks of "F. C. W." may call forward important and interesting correspondence. I must be permitted to disown the invention of the word "forgacious," in my last letter to Mr. Leighton. The merit of its analogical force is not mine; my bad writing disguised the epithet: "fugacious." DAVID MUSHET: *Feb. 26.*

## GASES FROM THE BLAST-FURNACE.

Sir,—In reply to Mr. J. White, Aberystwyth Works, who will inform us what are "the proper arrangements for bringing down the gases to the hot-air stoves without any chimney at all?" I have no practical experience in the process; but was informed by those who had spent much time in perfecting it, that they had found the difficulty I stated. I readily credited the statement, because it consists with known principles. The account of the fan employed in Staffordshire was a further confirmation, because mechanical power would hardly have been resorted to without a difficulty to overcome. Information as to the "proper arrangement," by which both the high chimney and the mechanical outlay can be avoided, will prove a great accession to the valuable facts you are collecting. A detail of the best methods of heating the boilers during the interval of stoppages, and which must be done before any gas is produced to continue the heat, will be an important addition.—DAVID MUSHET: *March 5.*

## PATENT LAW.

Sir,—Though I agree with your remarks on the hardship experienced by the plaintiff in the cause, *Hutchison v. Teychenne*, it is yet, I think, important not to rest too much in complaints on the slowness of the legal redress, but to examine deeper into the root and causes of this evil. These appear to present two essential features. First, the uncertainty which attaches inevitably to newly-created rights; and, next, a very lax tone of morality which certainly prevails respecting these rights. It is quite true that new inventions, or new applications of the gifts of creation, may, in the first instance, be regarded as a sort of *res nullius*—an unclaimed property, open to the skill and dexterity of whoever may first succeed in appropriating them; but this indefinite title ceases the moment they have been appropriated. It is unjustifiable to carry uncertainty one point beyond this limit; but, unfortunately, the nicety of the boundary affords men of doubtful honesty a plausible ground and pretext for fraud and litigation. Without question, the man who encloses and reclaims a waste hitherto unowned, has as strict a title to the results of his own labour as if the land had been transmitted through centuries, secured by deeds and long occupation; but to men without that high tone of character, which is extraordinary that any one can bear to be deficient in, this fact of late possession offers a temptation to success in disturbing and defeating the ownership; whereas, in the other case, the dreams of truculence are met by a complete repulse, there is indeed nothing to suggest them. As patent rights are investigated before the same tribunals which defend the rights of other property, it is plain the odium attaching to patent suits must be due much more to the nature of that property than to the institutions for protecting it. Dishonesty respecting patent right seems to be very much classed in the general opinion with frauds on the revenue, or the encouragement of smuggling or poaching. A man of true principle will discountenance either. Where there is a law existing, no one who respects himself, or his rights and duties as a citizen, will ever patronise or sanction the remotest evasion of that law, scattering as it does he knows not where, nor to what degree, the elements of future crime. But we do unhappily know that multitudes of persons, reputedly honest and respectable, hold very doubtful opinions and practice on these points. We only become fully aware how much the desire of gain confounds men's understanding, and how widely these seeds of corruption are spread beneath the surface of society, when some propitious occasion—such as the late railway mania—stimulates them to shoot forth into blossoms and fruit. It is a matter certainly of deep regret that law can be so powerfully wielded by the dishonest for delaying and defrauding justice; but this evil must not be too peculiarly attached to patent law. A dishonest partner may involve an honest man in years of expensive litigation, and bring him to absolute ruin, or the brink of it; while the very protections which are established to sift his claims and do him justice, protect the period of attaining it; but these are the ills which flesh is heir to. A reform in law has always proved the most difficult of tasks. The administrators of justice in this country are, perhaps, as pure and upright a body as ever were intrusted with that sacred office. Still they are men, and, as such, must differ in opinion; and that opinion will be less variable and more correct in proportion as they are conversant with the subject they have to decide upon; hence the occasional strangeness of decisions upon new inventions. The evil, therefore, seems to reside more in the subject than the means of justice; and, further, the prosecutor of a right has to take his chances of the character and talent of the subordinates, who are intrusted to enforce it upon one side, and to frustrate it on the other. We all know how difficult it is to assert a nice point of truth in the face of clamorous fraud and falsehood; and I must confess I have as yet seen no proposal for amending the administration of patent law that carries with it any assurance it will attain that end. Late reforms upon legal matters are not encouraging. Let us rather hope to see public and private opinion bearing in a more decided and emphatic manner upon the value of these rights, so that litigation shall not be needed—a noble and patriotic spirit, recognising such claims in their full force. If we consider that a tract of land, acquired centuries ago, by rapine or by justifiable bravery, by treachery or parasitism, or as the due reward of merit, is handed to its owner in perpetuity, we ought to think that a title for 14 years is a very brief reward for that enterprise which is as peculiarly the spirit of this age as a different kind of enterprise was necessarily the spirit of ages past. I am convinced that, were even a more proportionate term of property given to patent inventions, investing them with greater solidity and magnitude, it would prove a national benefit, by enhancing genius and stimulating its efforts, and discouraging that greedy and disreputable spirit, which, under the cry of "public good," hurries to inflict private wrong, and cannot rest till it throws down the barriers of a man's property, to riot in his fruits.

Let us hope that one effect of the magnificent exhibition which is approaching, may be to foster just and honourable notions on this important subject—that it may tend to cultivate a generous emulation, not in appropriating the ideas of others to our own benefit, but in respecting them—that, in place of desiring selfishly to use unacknowledged that which is another's, we may be more eager in applauding and rewarding merit, and feel, like intellectual beings, that in these efforts of mind there is

quite as j...  
pay, that...  
fraud, op...  
culation of...  
our nation...  
a deficient...  
hears of...  
of Saturd...  
  
THE...  
SIR,—...  
ventors, u...  
tally with...  
in the Jo...  
Patent...  
merch...  
some othe...  
by the gr...  
Governme...  
  
I thin...  
tercourse...  
position...  
patent is...  
ported by...  
majority...  
vent, if a...  
an outla...  
their dis...  
not be, th...  
by the ju...  
  
Why, k...  
knowing...  
coterie, i...  
this bein...  
place the...  
But, sup...  
ment com...  
men when...  
prejudice...  
table ar...  
who shal...  
appoint...  
is to pay...  
surate wi...  
annually...  
and I im...  
  
I take...  
—nay, e...  
and, the...  
vention...  
above pr...  
  
As reg...  
which is...  
not, be a...  
vention...  
  
I trust...  
only desi...  
jury to i...  
not conce...  
interests...  
nection v...  
  
I am g...  
and I thi...  
tion. In...  
time com...  
  
SIR,—...  
parent th...  
the Dow...  
method o...  
chimney...  
be increa...  
—injecti...  
Constant...  
heat, so...  
furnaces...  
Dowlais...  
could ob...  
iron the...  
  
SIR,—...  
graph, co...  
by a few...  
America...  
was also...  
idea hav...  
plated in...  
execution...  
tained, e...  
The A...  
the New...  
proposes...  
the point...  
Newfoun...  
damaged...  
settled a...  
laible an...  
as the so...  
of the we...  
sons, it...  
be statio...  
America...  
  
What...  
depth of...  
its own...  
might be...  
any such...  
ments by...  
and beve...  
centres l...  
tervals, a...  
wire will...  
places, n...  
difficult...  
the depth...  
the weigh...  
a yard of...  
testing m...  
nothing;...  
the weigh...  
can be re...  
ther adv...  
the great...  
required...  
depth, o...  
negative...  
jurious t...  
little pur...  
tion. I...  
water du...  
waves du...  
long wave...  
It does...  
and arra...  
into suc...



quite as just and authoritative a property as in mines, or houses, or lands; nay, that the very uncertainty of the title, instead of being an occasion for fraud, ought more emphatically to refine and elevate our care and appreciation of the claims of right and wrong. This is absolutely required for our national character; it can only be from the existence of the habit of a deficient and unworthy mode of thought upon such questions that we hear so often of such cases as that recorded by Mr. Leighton in your Journal of Saturday last.—DAVID MURPHY: Feb. 26.

#### THE PATENT LAWS AND TREATIES OF COMMERCE.

SIR,—As the *Mining Journal* is a staunch advocate for the rights of inventors, although an upholder of the interests of capitalists and manufacturers, upon the true doctrine that the real interests of the one will always tally with the real interests of the other, I was somewhat surprised to see, in the Journal of Feb. 16, under the title of "Treaties of Commerce and the Patent Laws," a proposition to the effect, that the system of granting patents for a temporary property in inventions, is antagonistic to the commercial progress of the nation, and, therefore, ought to be swept away, and some other method of rewarding inventors substituted in its place—viz.: by the grant of a pecuniary compensation to the inventor, awarded by a Government commission!

I think I may be allowed to place my experience, derived from an intercourse with inventors and patentees of more than 10 years' duration, in opposition to the "opinion, that the mode of remunerating inventors by patent is not beneficial to the public at the present day," although it be supported by many practical men; and this experience teaches me that the majority of persons would not find the same inducement to devise and invent, if after the toil and anxiety of a protracted period, and, perhaps, after an outlay of a considerable sum, they might either enjoy the profits of their discoveries so long as they could keep them secret; or, if this could not be, they were to look to such a sum as might be apportioned to them by the judgment of the Government commission as their reward.

Why, Sir, every man who knows anything of public business, must know that a Government commission frequently resolves itself into as a mere *coterie*, in which jobbery and all bureaucratic vices have full swing; and, this being known, who would feel sufficient confidence in such a body to place the labours of years in their hands, and entirely at their disposal? But, supposing that we have drawn so near the millennium, that Government commissions are no longer corrupt, where shall we find a body of men who will conjoin with the strictest integrity and freedom from all prejudices the requisite knowledge and judgment necessary to become equitable arbiters of the value of the mental labour and skill of others, and who shall be nominated as qualified, by wisdom and worth, to select and appoint these arbiters of inventive genius? And last, but not least, who is to pay the piper? If inventors are to be rewarded on a scale commensurate with the justice of their claims, it will require a considerable sum annually to be added to the budget of the Chancellor of the Exchequer; and I imagine these are not the days for such unpalatable additions.

I take it, that no practical man will deny that inventions are beneficial—nay, even necessary—to the progress of the arts and manufactures; and, therefore, that any measures which would check the progress of invention, must retard the progress of the arts. All that I have stated above proceeds upon these premises.

As regards the policy of granting patent rights in Great Britain for that which is already known abroad, I will say nothing; it might, or it might not, be as well to require, like the law of the United States, that the invention be original as against all the world.

I trust, Sir, that you will give these arguments of mine fair play. I only desire to prevent a system being propounded which might be of injury to inventors and the public. Although I am a patent agent, I do not conceive that a change, such as that recommended, would affect my interests; and it will not be fair to consider the fact of my position in connection with my arguments.

I am glad to see that Mr. Lowe has escaped from the fangs of *sci. fa.*; and I think your remarks, in last week's Journal, deserve every attention. Inventors may now fairly cheer each other with the hope of a "good time coming."—F. W. CAMPIN: 210, Strand, Feb. 20.

#### IMPROVEMENTS IN THE PUDDLING-FURNACE.

SIR,—A "Constant Reader" has furnished us with a difference, more apparent than real, between the Dowlais and Mr. Plant's patents in the use of steam in the puddling-furnace. The only difference I can see, is that the Dowlais partook more of the nature of Mr. B. Thompson's improved method of making pig-iron by indraught, by the means of a powerful chimney, and a space left around the steam pipes to admit air, which could be increased or diminished at pleasure, and Mr. Plant's by the old method—induction, or blast. With respect to the capabilities of the furnaces, "A Constant Reader" is in error. There was a perfect command over the heat, so that a furnace would work at heat one-third more than ordinary furnaces, either of pig or plate-iron. The question then occurs, why did Dowlais and Blaith give it up? I have inquired repeatedly; but never could obtain a satisfactory answer. It is certainly more applicable to grey iron than white.—THOMAS JONES: *Llynvi Iron-Works, March 7.*

#### THE AMERICO-EUROPEAN TELEGRAPH.

SIR,—Fifteen months ago I proposed the construction of an electric telegraph, connecting Europe and America, and was laughed at for it, except by a few. About a month afterwards, intelligence was received from America that a similar proposition had been laid before Congress, which was also treated with equal ridicule in both countries. The novelty of the idea having now, however, passed away, the project seems to be contemplated in a more rational manner, and the possibility of carrying it into execution, of which there cannot be the least doubt, appears to be entertained, even by a large portion of those who first derided it.

The *Mining Journal* of the 2d instant contains an account, quoted from the *New York Journal of Commerce*, of the method in which Mr. Wilkins proposes to lay the wire, which materially differs from my plan. As to the points at which the telegraph should impinge upon the two countries, Newfoundland and Ireland seem to be objectionable; for the wire may be damaged by the breaking up of the winter in the former place, and so unsettled a country as Ireland could not, with safety, be trusted with so valuable and important an instrument in its charge—that is, at least, as far as the south and west is concerned; for in some moment of frenzy the whole of the works might be destroyed, and the wire cast loose. For these reasons, it would be more desirable that the British end of the telegraph should be stationed at the most eligible spot in Cornwall, or Devonshire, and the American sufficiently south to secure it from damage by ice.

What appears at first sight to be the most formidable difficulties are the depth of the ocean and the length of the wire, which would break under its own weight unless it rested on the bed of the sea; and even then it might be severely strained where extended over submarine valleys, should any such exist on the line in the Atlantic. I would meet these impediments by supporting the wire with pieces of cork, thickest in the centre, and bevelled regularly off towards the ends, the wire passing through their centres longitudinally—the corks to be of such dimensions, and at such intervals, as to support the wire nearly to the surface. By this means the wire will always remain at a regular depth, and, except in very shallow places, never touch the bottom. By the adoption of this plan, the above difficulties may be overcome; the partial floating of the wire will render the depth of no consequence, since each cork supports a proper share of the weight. For instance, suppose each cork to be of sufficient size to float a yard of wire prepared with gutta percha, and other insulating or protecting materials, and the corks placed a yard apart, the strain would be nothing; the wire would, in fact, float. By reducing the size of the corks, the weight of the wire would cause them to sink to a certain depth, which can be regulated by the reduction of the dimensions of the corks. A further advantage would be gained by the diminished depth of the wire, for the greater the depth, the more powerful would be the current of pyrogen required to overcome the resistance, which increases in proportion to the depth, owing to the current passing downward through a comparatively negative medium. The currents of the Atlantic are not likely to prove injurious to the wire; for, being round, and of small size, the water will have little purchase upon it, and the gulf stream is even in a favourable direction. I have heard the objection made, that the violent motion of the water during a storm might break the wire; but it is well known that the waves do not descend to any considerable depth, except in the form of a long swell, which the flexibility of the wire will, in my opinion, readily meet.

It does not seem to be necessary to enter here upon the minute details and arrangements that would be required to bring the proposed telegraph into successful operation, and to maintain it in working order. That it

would succeed, if carried into effect, there cannot be the least doubt; and the energetic manner in which our brethren of the United States have taken it up, affords a security that we shall ere long see the project carried out, perhaps while we are yet only talking of a line between this country and France. Shall we not enter upon an honourable rivalry with them? In less than six months the telegraph might be in operation with one wire, at an expense of less than 56,000*l.* JOHN J. LAKE.  
*Ordnance Office, Portsmouth, March 6.*

#### MATHER'S ANEMOMETER.

SIR,—If the invitation of the committee of the South Shields Mining Association to prevent accidents, in the *Mining Journal* of the 2d inst., for communications relative to this subject, may be as well complied with by the publication thereof in your Journal, I beg leave to present the following investigations and suggestions into, and relative to, the subject of Mr. Mather's paper, for insertion in your next Number.

Having been, during the greater part of my life, in practical contact with coal, ironstone, and lead mining, and having enjoyed some opportunities for experiment-making in connection therewith, which I have seldom or never neglected to embrace, I have acquired a tolerably extensive experience of all that relates practically and suggestively to this important branch of our industrial occupations. Without ever having seen, or even heard at this period, of Sir John Leslie's experiments upon the relations obtaining betwixt the velocities of motion of heated bodies, and their rates of cooling, I was led to infer exactly the same thing in 1828, which I investigated at Worneth Colliery, near Oldham, and Wyre Hall Colliery, near Leeds, by affixing a flat metallic vessel, containing hot water, to various parts of the arm of a revolving fly-wheel; in the former case, located in the external air, and in the latter, in an engine-house, from whence I deduced the inference that the rates of cooling were exactly proportionate, *ceteris paribus*, to the velocities of motion, and that a constant effect obtained in all experiments, conducted with care upon identical premises and with sameness of circumstances. But in the course of my lucubrations I acquired the notion that, as the rates of cooling of all bodies are inversely proportionate to their thermic constitutions (Leslie's capacity for heat), those of high thermic compendency cooling slowly, and *vice versa*, it must follow that Leslie's, or rather my, inference could only be true with constant compendency of medium of motion, and experiment with a small copper globe revolving in air, and again in hydrogen, fully attested the accuracy of my theoretic suspicions. Consequently, rate of cooling in an atmosphere of variable impregnation, as to amount, with carbonic acid, or the carburets of hydrogen, can never, even with useful approximation, be used as the co-efficient of velocity of motion of the cooling medium.

Therefore, notwithstanding Mr. Mather's suggestion is beautiful in the extreme for its simplicity, and true with an homogenous medium, it can never be used to determine the volumes of air transmitted through the levels and air-roads of coal mines at least, and perhaps not of any mines wherein men work, and many candles, or lamps, are burnt, by means of the velocity of the current medium. W. RADLEY, Ch. E.  
*Greenwich, March 6.*

#### CORONERS' INQUESTS ON DEATHS IN MINES—No. III.

But is this law?  
Ay, marry! let's; crowner's quest law.

SIR,—The way in which coroners are elected gives but little power of selection; and, on there being more than one candidate, other reasons than the best qualifications generally determine the choice of the freeholders. Presuming that the professors of the law are the most eligible for such an office, yet it will not be denied that among this numerous class there is a variety of characters of different talents and attainments, and it is as possible, under the existing order of things, that the most ignorant candidate should be elected, as the most learned. The judges of most other courts are chosen by the Crown, and the Ministers are held responsible for the due qualification of the individuals chosen. Notwithstanding that, in making these appointments, political or party bias has frequently some influence, there is but one opinion as to the high character and distinguished talents and learning of the judges who preside in Westminster Hall. There is doubtless a strong attachment to popular elections, and an attempt to transfer the appointment of coroners from the freeholders to the Crown might, in the first instance, excite some dissatisfaction. The advantages of such a change are so obviously expedient, and are so consistent with a better administration of justice by these courts, that these objections must give way on an impartial consideration of the subject, to some such improvement.

It may be said that the inquiries taken by the coroner are only preliminary to ulterior proceedings in the higher courts, in instances wherein the jury return a criminal verdict; and that even in cases in which exculpatory ones are given, justices of the peace have the power to resume the investigation, and decide on further prosecution, if they deem the justice of the case demands it. This, however, is not compulsory on the magistrates, and depends on their receiving information as to the facts, and other incidental circumstances over which they have no control; and the instances in which this power has been exercised in relation to accidents in mines are so "few and far between" as to render it little better than a legal fiction. If a coroner neglects his duty, or otherwise misconducts himself in his office, he is amenable to the judges of the Queen's Bench, who are the supreme coroners of the kingdom; but this controlling power is of little practical value as regards inquests on deaths in mines. For all practical purposes, experience has proved that the decisions of these courts are final; and, however much the verdicts may be at issue with the evidence, and the known circumstances of a mine in which a fatal accident has happened, we know of no instance in which an appeal to other tribunals has been resorted to. This passive acquiescence with such decisions is most probably owing to the ignorance and poverty of the widows and orphans of the sufferers, and of their friends, and not to any assent to the justice of the proceedings.

Seeing then that in most, if not in all, instances the decisions of this court are final as to mine accidents, it becomes highly important to the best interests of society that properly qualified persons ought to be appointed to preside over them; yet, as has been already shown, the present anomalous mode of electing these judges almost precludes the possibility of choice, notwithstanding a most careful selection is imperatively required. There is no doubt but that very many of those who occupy these stations are admirably fitted, both as to talents, acquirements, and disposition, for the office they hold; but it is equally certain that there are coroners of questionable qualifications. It is a somewhat ungracious task to adduce examples, even although, as public officers, the coroners are most undoubtedly amenable to observation and remark, as to their conduct in the discharge of their public duties. Some allusion to such instances of unfitness, however, appears necessary, and may, perhaps, be of some service.

Not very long ago, an inquest was held on the body of a miner, who, with many of his fellow-labourers, were killed in consequence of an explosion of fire-damp. Evidence was given that no artificial means of ventilation were employed, and it was admitted that the mine had been long in a dangerous state. These facts were substantiated, and remained uncontradicted. In summing up, the coroner omitted to read over or comment on what he called "the scientific evidence," as he said he did not understand it, nor did he suppose the jury would, although there was scarcely an intelligent person in that crowded court but what clearly understood it. In laying down the law, he stated that if the mine was as well ventilated as others in the district, no matter however faulty or imperfect that might be, and notwithstanding other and better systems of ventilation were pursued elsewhere, they must return a verdict of accidental death. On another more recent, and equally calamitous occasion, a neighbouring coroner enunciated the same rule of law; and, in both instances, the verdicts were, of course, exculpatory; and although great dissatisfaction was evinced by the public at the result of these inquests, no further judicial proceedings were instituted.

Such is "crowner's quest law," the accommodating and direct tendency of which is unmistakable. It sometimes happens that the decisions of the superior courts, as to the meaning and applicability of the laws, is irreconcilable with our notions of justice and common sense; but, in this case, we have the advantage of a different version of the law, as interpreted by Mr. Justice Bayley in his address to the grand jury at the Durham spring assizes in 1824, who said, in alluding to a recent great loss of life by a colliery explosion—"If those persons who had the care of such concerns did not use proper caution (whether the want of caution arose from the use of improper lamps, or from whatever other cause), in the event of death ensuing, they would be liable to the charge of manslaughter." This learned and upright judge propounded no geographical limitations to the operation of the law, nor did he attempt to abrogate it by making its general infraction in a certain locality an indemnity against its pre-

scribed penalties. Whether in Kent or in Durham, he maintained the same law as equally applicable to offences, however rare, or however common, those offences might be in those counties. The absurdity of such "crowner's quest law" is, however, its best refutation; and it only becomes important from its consequences.

In commenting on the proceedings of the coroner at the inquest on the Darley Main sufferers, the *Newcastle Guardian* of Feb. 3, 1849, animadverts as follows on the conduct of that functionary:—

Other agents and viewers said ditto to Mr. Locke—all of them, with singular unanimity, agreeing to charge the high wind with the terrible event! One of the workmen, however, told a somewhat different story. The following is a part of James Hammond's evidence:—

Coroner: Whom do you blame for the explosion?—Witness: I blame both T. and G. Adley, the underground managers.

Coroner: What for?—Witness: For letting the men work in places which were not fit to work. They were put in power to see that the men did not go in places which were not fit.

Coroner: Do not you think that the fact of their both going into these places themselves shows that they thought they were fit for the men to work in?—Witness: Yes; but it has got so bad, that it could not be fit for us to work in. Some of the men would have spoken about it, but they were afraid of losing their work.

Coroner: Why did you not stop the work of the pit if it was in that state?—If the man had spoken out he might have said—"Because I was afraid of losing my work there, and been unable to obtain it elsewhere;" but from motives of expediency he shirked a direct answer, and replied—"Well, I have heard the men talk about it."

Here the coroner sprung upon him like an Old Bailey counsel—I cannot take as evidence anything that you have heard. Did you ever apprehend any danger?—Witness: I did.

The cross-examiner, who probably knows about as much law as the piteous, "took nothing by his motion;" and after muttering that it was very odd, if he thought there was danger, that he should still go on working, asked the witness to explain the cause of the explosion.—Witness: It has been done by taking away all the coal before them, and throwing it all dead behind, so that the wind could not get down behind them.

The Coroner remembered the evidence of the viewer, and inquired if the high wind had not something to do with the accident?—"It may have had something to do with it," was the reply, "but it has been through sulphur lying in the works."

The Coroner stated that he had been in correspondence with Sir G. Grey, who was willing to send down an inspector, if the jury thought it advisable.

The jury deemed this advisable, and the inquest was adjourned.

#### The Newcastle Guardian continues.—

We are glad this course has been taken, and only wish that we could anticipate from it beneficial results. Doubtless the presence of a competent individual, charged by the Executive Government with the important duty of watching the proceedings, will have a salutary effect on the conduct of the presiding official; we may expect to find the proceedings orderly and impartial, and henceforth devoid of the snappish and browbeating style of examination, so unbecoming the position and character of a coroner, of which we have adduced some specimens.

Neath, Feb. 25.

J. RICHARDSON, C.E.

#### GUTTA PERCHA.

SIR,—There are few evils in the category of ills more reprehensible, or dangerous, than the employment of leaden pipes for conveying water into public buildings or private dwellings. The case of Southampton stands out in prominent relief, as well as that at Claremont—in this country the more dangerous, seeing that the general impregnation in water is a super-carbonate of lime. I have been some times startled with the rapidity with which water becomes notably charged with lead. The mere transit of water through a leaden pipe, a few feet in length, has sufficed, and which has been readily detected by a continuous stream of sulphuretted hydrogen. The bad qualities of the water in this locality are quite enough to contend against, without being subjected to the risk of being poisoned by virulent salts of lead. I have had my leaden pipe taken up, and substituted by one of gutta percha; there was some difficulty in attaching it to the main, which, however, was eventually accomplished by a brass ferrule, &c. It has since been suggested to me that there is considerable risk that the gutta percha pipe may be gnawed by rats; but I have recommended, to meet this eventuality, that the pipe should be coated with pitch, or tar—an effectual remedy against these omnivorous animals. J. MURRAY.  
*Portland-place, Hull, March 6.*

#### SOURCE OF INFUSORIAL LIFE.

SIR,—Apart from organic matter derived from animal and vegetable sources, resulting from fermenting and decomposing materials, there is yet another and unsuspected origin of the development of infusorial life—I mean the calcareous, and it may be other earthy, matter dissolved in water. By a high magnifying power, I have detected the germs, or ova, of animalcula life in prepared chalk, and this dissolved in distilled water, by means of a stream of carbonic acid gas, in process of time, in a summer's sun, developed polygastric infusorie; due care, of course, was taken as to the exclusion of atmospheric air. Meets akin to these, and somewhat similar experiments, at once extinguish the sceptical notion of equivocal production, or spontaneous generation, and reveal the source of error in Mr. Crosse's experiments as to insect creations, so greedily pounced upon by the atheistical author of that mass of error and gratuitous assumption—*The Vestiges of Creation*. On purifying water by Mr. Horsley's process, organic matter has been precipitated in the act of decomposition, and water thus depurated has remained in my possession unchanged for many months, perfectly soft, and as pellucid as that which rises at the source of the mountain-hill; and, for anything I can see to the contrary, may remain unchanged for many years to come. J. MURRAY.  
*Portland-place, Hull, March 6.*

NEW APPLICATION OF STEAM-POWER IN NAVIGATION.—We have had an opportunity of examining the new application of steam-power in navigation, for which the ingenious inventors, the Messrs. Ruthven, of New-street, have secured patents both in this country and in the United States of America. The disadvantages of the paddle-wheels in steam-vessels are too well-known to require enumeration. The attention of the Messrs. Ruthven, of Edinburgh, whose names rank high as engineers, has, it seems, for a long period been directed to this subject. The result has been the discovery or application of a new method of propelling and navigating steam-vessels. The arrangement consists in the forcible expulsion of water from a nozzle or bent pipe, at each side of the vessel, which is effected by the power of the steam-engine. The form and properties of a sailing vessel are preserved, there being no projections on the hull in the form of paddle-boxes or otherwise. Under the engine, which is placed in a horizontal position, is a round iron case, in which there is a wheel, having a shaft through what is termed a stuffing-box, on the upper or outer side. The piston of the steam-engine is attached to the shaft cranks, and the steam-power is applied wholly to revolving the wheel in the iron case, which, being made something like a fan-wheel, carries the water with it in its revolutions. The water, in obedience to the laws of centrifugal motion, presses towards the outer rim of the case with a force proportionate to the speed, and escapes by an aperture and pipe at each side, whence it is discharged by the nozzle or bent pipe, into the sea. The water is supplied to the iron case by a large flat pipe, which has a free communication with the sea by means of apertures in the bottom of the vessel. The nozzle is above the water line, and can be turned by the seamen on deck with the greatest facility, so as to discharge the water either towards the bow or stern. Discharging the water a-stern, makes the vessel go a-head; when discharged towards the bow, the vessel goes a-stern; and when discharged downwards, the vessel remains stationary. These operations are effected without the engine being altered or stopped—a material improvement on the paddle-wheel; and as the elevation of one nozzle is rapidly altered independently of the other, ample facilities are given for turning the vessel. The absence of obstruction on the hull enables the vessel to use sails with as much effect as a common sailing vessel; while the steam-power may be perfectly combined with the action of the sails—an advantage denied to a steam-vessel, except to a limited extent. It is difficult to convey an adequate idea of the improvements without an inspection of the mechanism—an inspection, however, for which Messrs. Ruthven are anxious to afford every facility, having constructed a model of a vessel, 12 ft. in length, for the illustration of the improved method of propulsion.—*Edinburgh Evening Courant.*

NEW TANK LOCOMOTIVE.—A new locomotive, embracing along with the machinery the facilities of a tender, has been placed on the Newcastle and Berwick line for a trial trip: it was from the manufactory of Messrs. Hawthorn, and was the first constructed. The principal feature is that it carries its own supply of coke and water, without the necessity of a tender; which is done by two tanks, one placed under the footboard and the other under the boiler. It is also provided with a powerful break to act upon the large wheels, so that it is complete in itself. It left Newcastle for Lesbury, a distance of 33½ miles, with a train of 38 tons, exclusive of the engine, and travelled at the rate of 35 miles per hour. It consumed 12½ lbs. of coke per mile, including getting up steam previous to starting. The water evaporated was about 14 gallons per mile; but, as is always the case with new engines on their first trip, it "primed" considerably, so that the evaporation of water will be much less when the boiler is perfectly clean. The engine worked extremely steady, and was quite free from any lateral or pitching motion. The tank engine is the first of several of the same kind in the course of construction for the Edinburgh, Perth, and Dundee Railway Company, and it is intended to run with the light trains on their short branch lines. The engine carries sufficient coke for a run of 70 miles, and water for 30 miles, and is arranged to run with either end first, thereby preventing the necessity of turning the tables at the termination of the branches, which will be of considerable saving to the company, besides a saving in fuel, and first cost.—*Newcastle Courant.*

CAUTION TO COLLIERIES.—William Guest, a collier, has been committed to prison for three months' hard labour for leaving his work under Thomas Gold and another, at the Blue Ball Colliery, Dudley, without notice.



**EASTERN COAST OF CENTRAL AMERICA COMMERCIAL AND AGRICULTURAL COMPANY.**—In conformity with the resolutions passed at the meeting of Holders of Debenture Bonds, held at the London Tavern on Tuesday, the 19th ult., the committee hereby give Notice, that the TIME APPOINTED for the PAYMENT of TWO SHILLINGS and SIXPENCE per debenture, towards meeting the preliminary expenses attendant upon the procuring a renewed grant from the Guatemalan Government, will EXPIRE on Friday, the 13th of March inst., after which time the holders of Debenture Bonds not making this payment will be precluded from the right to participate in the benefits which may arise from the proposed proceedings. The payment is to be made to Mr. N. Lindo, 17, King's Arms-yard, Moorgate-street, solicitor, and the debenture to be produced, when a receipt for the amount paid will be given.—March 4, 1880.

**NATAL COMPANY (Provisionally Registered).**—Promoter Joseph Steer Christopher, Esq., of Potemkinburg, Natal.—A PUBLIC MEETING will be HELD on Monday, the 11th of March inst., at the Albion Hotel, Aldersgate-street, when the attendance of any parties taking an interest in the formation of this company is requested. In the meantime applications for prospectuses, &c., may be made to Joseph Steer Christopher, Esq., at the North and South American Coffee-house, City; to the secretary, Thomas James Blair, Esq.; or to Wathen and Phillips, solicitors to the Company, 18, Ainslie-street.—March 7, 1880.

N.B.—The chair will be taken at half-past Seven in the evening precisely.

**STEVENS AND SON, GAS ENGINEERS, IRON and BRASS FOUNDERS, and CONTRACTORS for the ERECTION of GAS-WORKS, inclusive of APPARATUS, of every description, for the MANUFACTURE of GAS, and the FITTINGS of from 20 to 20,000 LIGHTS, whether for Public or Private use.**  
ESTABLISHED IN 1815.  
MANUFACTURERS of STATION METERS and GOVERNORS; and CONSUMERS' GAS-METERS, of the most approved construction.  
CAST-IRON MAINS SUPPLIED and LAID for GAS or WATER; Street Lamp-posts, Brackets, and Bronze, Copper, Iron, or Tin Lanterns.  
TANKS and LIQUOR BACKS, of any dimensions, in Cast-iron or Galvanised Wrought-iron, constructed and erected.  
The PATENT SEMAPHORE RAILWAY SIGNALS; and RAILWAY LAMPS, for Stations, Engines, Carriages, Signalmen, &c.  
REGISTERING TURN-STILES, for Bridges, Piers, Baths, Public Gardens, &c.  
ARCHITECTURAL DESIGNS CARVED in WOOD, or MODELLED in WAX or COMPOSITION, by Artists on the premises, and CAST in BRONZE, BRASS, IRON, &c.  
AND DRAWINGS, PLANS, and SPECIFICATIONS submitted.  
Address—STEVENS & SON, DARTINGTON WORKS, 19, SOUTHWARK BRIDGE-ROAD, LONDON.

**INDURATED and IMPERVIOUS STONE, CHALK, &c.**  
—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHISON'S MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large.  
Apply to HUTCHISON & CO.,  
140, Strand, London; or Tunbridge Wells, Kent, and Caen, Normandy, stating name, address, and capital at command.  
N.B.—Houses cured of damp. The produce of soft stone quarries, chalk, plaster of Paris, wood, pasteboard, and all absorbent materials indurated to resist frost, vermin, &c.  
LICENCES GRANTED.

**PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES and CLOCKS.**  
E. J. DENT, 82, Strand; 33, Cockspur-street; 34, Royal Exchange (clock tower area).  
Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6s. each; in gold cases, from £3 to £10 extra. Gold horizontal watches, with gold dials, from 8s. to 12s. each.  
DENT'S PATENT DIPLIODESCOPE,  
or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

**THE PATENT OFFICE AND DESIGNS REGISTRY.**  
No. 210, STRAND, LONDON.  
INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.  
Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years' experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.  
Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.  
Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

**INDEPENDENT RAILWAY AUDIT.**—A general meeting of the deputations, appointed at the recent railway meetings, upon the question of audit, took place at the Euston Hotel, yesterday. The meeting was strictly a private one; but we have been informed that the London and North-Western, Great Western, South-Western, Eastern Counties, Blackwall, Lancashire and Yorkshire, York, Newcastle, and Berwick, Midland, Great Northern, and some other railway companies, were represented. The draft of a bill, as put together by the committee, who have been for some time sitting on behalf of the shareholders, was considered, clause by clause, and finally agreed to. We understand that strong feeling was expressed, especially by the representatives of some of the northern companies, against any restrictive and unelastic conditions which would tie up the hands of the shareholders; and a unanimous expression of opinion against Government interference in any shape was given. The bill, as proposed, comprises not only wholesome and stringent provisions with respect to audit, but also clauses, altering to some extent the working of railway administration. We believe an adjourned meeting takes place to-day, and that the independent measure of the shareholders will then be fairly launched and given to the public.

**PRICES OF MINING MATERIALS,**  
As charged at the STRAY PARK MINES in the following months:—

Description.	Sept.	Oct.	Nov.	Dec.
Coal, carriage included.....per ton	13s 6d	13s 6d	14s 0d	14 0d
Timber, balk.....per foot	0 10	0 10	0 10	0 9
Iron, common.....per cwt.	6	6	6	6
Ditto, hoop.....per cwt.	10 6	10 6	10 6	10 6
Steel, double converted.....per cwt.	19 6	19 6	19 6	19 6
Ditto, gad.....per cwt.	24 6	24 6	24 6	24 6
Rope.....per lb.	36 0	36 0	34 0	34 0
White yarn.....per lb.	0 4	0 4	0 4	0 4
Hemp.....per lb.	0 4	0 4	0 4	0 4
Chain, best.....per cwt.	20 0	20 0	20 0	20 0
Oil, rape.....per gal.	2 6	2 6	2 6	2 6
Lead, white.....per cwt.	24 6	24 6	24 6	24 6
Nails, 2s.....per cwt.	15 3	15 3	15 3	15 3
Ditto, 3s.....per cwt.	16 0	16 0	16 0	16 0
Ditto, 5s.....per cwt.	14 6	14 6	14 6	14 6
Leather.....per lb.	1 2	1 2	1 2	1 2
Padlocks (with two keys).....per doz.	9 0	9 0	9 0	9 0
Candles, best.....per doz.	4 6	4 6	4 6	4 6
Ditto, common.....per 100 lbs.	38 0	38 0	38 0	38 0
Powder.....per doz.	1 4	1 4	1 4	1 4
Hitls.....per cwt.	39 0	39 0	39 0	39 0
Tallow.....per cwt.	4 0	4 0	4 0	4 0
Cans.....per doz.	0 4	0 4	0 4	0 4
Safety fuse.....per coil.	0 4	0 4	0 4	0 4

**CORNISH STEAM-ENGINES.**  
(Abstract from Browne's Cornish Engine Reporter, from Jan. 21 to Feb. 20.)

PUMPING-ENGINES.		NOTARY-ENGINE-DRIVERS.	
Number reported.....	29	Number reported.....	20
Average load per square inch on the piston, in lbs.....	131	Number of kipples drawn.....	78,349
Average number of strokes per minute.....	61	Average depth of drawing, in fathoms.....	135.4
Gallons of water drawn per minute.....	6022	Average number of horse-whim kipples drawn the average depth, by consuming 1 cwt. of coals.....	547
Average duty of 17 engines—being million lbs. lifted 1 foot high, by the consumption of 1 cwt. of coals.....	1173.9	Average duty of 15 engines, as above.....	176
Average consumption of coals per horse-power per hour, in lbs.....	41		
		Number reported.....	2
		Average number of strokes per minute.....	137
		Average duty of 5 engines, as above.....	413
		Actual horse-power employed per minute.....	135.0
		Par Consols.....80-inch single.....	101.2
		Great Polgoth.....80-inch single.....	91.7
		Foray Consols.....80-inch single.....	91.4
		West Fowey Consols.....60-inch single.....	84.4
		North Pool.....60-inch single.....	73.4
		Stray Park.....60-inch single.....	73.2
		Callington.....50-inch single.....	71.4
		Trelawny.....50-inch single.....	71.4
		Par Consols.....24 & 13-inch Sims's combined.....	28.0
		Foray Consols.....24 & 13-inch Sims's combined.....	27.8
		Par Consols.....24 & 13-inch Sims's combined.....	27.2
		Great Polgoth.....24 & 13-inch Sims's combined.....	22.0
		Par Consols.....24 & 13-inch Sims's combined.....	20.8
		Devon Great Consols.....30 and 16-inch Sims's combined.....	19.2
		Great Polgoth.....35-inch double.....	60.1
		Lewis Mines.....32 and 28-inch Sims's combined.....	50.9
		South Caradon.....26-inch single.....	49.0

**STRUVE'S PATENT MINE VENTILATOR.**  
Cost, £150.  
TO COLLIERY PROPRIETORS.  
Quantity of air passed through a Mine almost unlimited, to the extent of 500,000 cubic feet per minute, if necessary—depending on size of apparatus.  
COST of an APPARATUS to produce a ventilation of 20,000 cubic feet per minute, ONE HUNDRED and FIFTY POUNDS, exclusive of patent right. This amount of ventilation would be sufficient for a mine working 150 tons per day, provided it was not very dry; in which case it would be desirable to provide for 30,000 cubic feet of air per minute. The capabilities of the Ventilator may be doubled at any future time, at a comparatively small cost.  
The Ventilator has been at work for upwards of nine months at the Eaglesham Colliery, near North, working under a rarefaction of 2½ to 3 inches of water, which demonstrates the impracticability of furnace ventilation, when the shafts are shallow and the airways small.—It is practical to rarify a mine by this ventilator to the extent of 2 feet of water, or 2 inches of mercury.  
LICENCES will be GRANTED on application to  
MR. WILLIAM PRICE STRUVE, Swansea,  
CIVIL ENGINEER and MINERAL SURVEYOR.

**WARRANTED SAFETY FUSE.—W. BRUNTON & CO.**  
beg to inform Mine Agents, Contractors, and Merchants, that having completed their Machinery for the MANUFACTURE of the ABOVE ARTICLE, they are enabled to offer FUSE of a very superior quality, and at considerably reduced prices.  
W. B. & Co. can SUPPLY FUSE in ANY LENGTHS that may be required.  
Penhick FUSE Factory, Pool, Truro, Cornwall.

**TESTIMONIALS.**  
Messrs. W. BRUNTON & Co. North Pool Mine, Nov. 27, 1849.  
GENTLEMEN.—We have had your Safety Fuse in constant use during the last seven months, and much pleasure in expressing our own satisfaction with it, and in being able to tell you that we have not had a single complaint of your Fuse made by any of our men during the whole period—though they are particularly instructed to return any bad materials which may be supplied to them.  
JAMES EVANS, Manager, FREDERICK EVANS,  
JOHN NANCARROW, HENRY JAMES.  
Messrs. W. BRUNTON & Co. Tincroft Mine, Nov. 27, 1849.  
GENTLEMEN.—Since last March, when you commenced manufacturing Safety Fuse, we have had Fuse of your make in daily use in all parts of our mine, and can with strict impartiality state that the article supplied by you has been excellent. In proof of this we may mention, that during the whole of that time we have not had a single accident of any description.  
PETER FLOYD, Manager, JOHN THOMAS,  
THOMAS STAINSBY, HENRY HOCKEN,  
THOMAS LEAN, RICHARD MARTIN.

Messrs. W. BRUNTON & Co. Wheat Agar Mine, Nov. 28, 1849.  
GENTLEMEN.—There has been a good deal of your Fuse used at our mine, and we can safely pronounce it to be as good an article as we ever saw.  
ALEX. EUDEY, Manager, JOSEPH EUDEY.

Messrs. W. BRUNTON & Co. South Roskell Mine, Nov. 29, 1849.  
GENTLEMEN.—Your Fuse is a capital article, so far as our experience of it goes. It is well made, and certain in its operation. The men have brought no complaints of it, nor has a single accident occurred with it.  
WILLIAM THOMAS, JOHN DUNKIN.

Messrs. W. BRUNTON & Co. North Roskell Mine, Nov. 30, 1849.  
GENTLEMEN.—All the Fuse you have sent to this mine, during several months past, has been as good as we have ever had from the other Fuse factories. There has been no fault found with it, nor has there been any accident in using it.  
JOSEPH VIVIAN, Manager, JOHN HODGE.

Messrs. W. BRUNTON & Co. Cook's Kitchen Mine, Nov. 29, 1849.  
GENTLEMEN.—We have very cheerfully give our testimony to the good quality of your Fuse—for eight months we have used it, and no accident has occurred.  
JOSEPH VIVIAN, Manager, JOHN IVEY,  
W. G. HILL, RICHARD BENNETTS.

Messrs. W. BRUNTON & Co. Carn Brea Mine, Nov. 29, 1849.  
GENTLEMEN.—We have used 9000 coils of your Fuse in our mine in the course of the last eight months; and have pleasure in stating that not a single case of accident has arisen therefrom, and we consider your Fuse as good as any that is made.  
R. H. PIERCE, Manager, ABRAHAM BENNETTS,  
JOHN LENTEN, Managing JOHN VIVIAN,  
JAMES MINERS, Agents, JOHN JAMES,  
WILLIAM ROBERTS, JOHN DAW.

Messrs. W. BRUNTON & Co. Penhick FUSE Factory.  
GENTLEMEN.—We have used, and are still using, your Fuse, and have no hesitation in expressing our conviction that it is, in all respects, entitled to the character of Safety Fuse—being as good an article, and as safe in use as any we have seen.  
WILLIAM JEFFERY, } Lanarth Mine.  
JOSEPH MICHELL, }  
WM. H. VERRAN, East Wheel Fortune.  
WILLIAM WILLIAMS, Manager,  
FRANCIS BENNETTS,  
JAMES WILLIAMS, } Wheat Friendship Mine.  
JOSEPH PEARSE, }  
FRANCIS KENT. }

Messrs. W. BRUNTON & Co. Prestonpans Colliery, Edinburgh Sept. 17, 1849.  
GENTLEMEN.—The miners inform me that the Fuses are of excellent quality, and have not lost a single shot since the commencement; while, with some of a very similar appearance we used before, nearly half the charges missed fire.  
JOHN GRIEVE.

**SEWERAGE OF LONDON.**—The ATTENTION of the COMMISSIONERS appointed to determine upon the MOST EFFICIENT MATERIAL for the CONSTRUCTION of the SEWERS of LONDON, is particularly directed to the ASPHALTE of SEYSSSEL, which more than any other material is applicable to the CONSTRUCTING and INTERNAL COATING of BRICK CULVERTS and OTHER CHANNELS for DRAINAGE.  
The experiments made by the Royal Artillery on the embankment of Plymouth Citadel, constructed of Seyssel Asphaltic Brickwork, under the order of the Hon. Board of Ordnance, have fully proved the superiority, adhesiveness, and strength of Seyssel Asphalt over all other cementitious compositions. A printed account of these experiments can be had on application to  
I. FARELL, Secretary,  
Seyssel Asphaltic Company—"Claridge's Patent"—Established 1838.  
Note.—The Application of the Asphalt of Seyssel is especially recommended by the Commissioners on the Fine Arts for covering the ground line of brickwork in marshy situations, and it has been suggested that it would be peculiarly applicable for covering the areas of closed grass yards, and for the construction of catwalks.

**ACCIDENTAL DEATH INSURANCE COMPANY.**  
(Completely Registered under the Act 7 and 8, Victoria, c. 110).  
7, BANK BUILDINGS, LOTHBURY, LONDON.  
(ADJOINING THE GOVERNMENT ANNUITY OFFICE, OLD JEWRY).  
KENYON S. PARKER, Esq., Q.C., CHAIRMAN.

The directors beg to inform the public, that they are now ISSUING POLICIES to INSURE the LIVES of all classes of persons in case of DEATH from ACCIDENT or VIOLENCE of every description. Amongst others:—  
By GUNSHOT and OTHER WOUNDS By DROWNING  
HORSES SUFFOCATION  
COACHES, CARRIAGES EXPLOSIONS  
WAGGONS, CARTS BURNS  
RAILWAYS SCALDS  
MACHINERY LIGHTNING  
FALLS OF EARTH and OTHER MURDER  
FALLS MANSLAUGHTER  
The risks undertaken by the company will be divided into classes.

**CLASS I.—ORDINARY RISKS.**  
Single payment 21s. for £100.—Annual payment, 2s. 6d. for £100.  
Prospectuses, forms of proposal for insurances, application for shares, and further information, may be obtained at the offices of the company, or on application to any of the company's agents.  
By order of the directors,  
WILLIAM YOUNG, Secretary.

**UNITED GUARANTEE AND LIFE ASSURANCE COMPANY.**  
No. 26, OLD JEWRY, LONDON.  
The Right Hon. Lord ERSKINE, CHAIRMAN.  
JOSHUA P. WESTHEAD, M.P., VICE-CHAIRMAN.  
CAPITAL £100,000.  
For affording to approved PERSONS, on the most favourable terms, GUARANTEES for their FIDELITY in all Occupations where SECURITY is required, and for the ASSURANCE of LIFE, conjointly with, or separately from, Policies of Guarantee.  
Active AGENTS required in the principal towns in DEVON and CORNWALL.  
Applications to be made to the secretary, at 26, Old Jewry, London.  
JAMES KNIGHT, Secretary.

**SEA, FIRE, LIFE ASSURANCE OFFICE,**  
CONNECTING THE MINING INTERESTS OF ENGLAND AND WALES.  
(ESTABLISHED BY ACT OF PARLIAMENT.)  
Capital £100,000, in shares of 20s. each, to be paid in full on allotment, bearing a guaranteed interest of 5 per cent. in perpetuity (irrespective of further dividends) upon the paid-up capital.  
Application for shares to be addressed to the Directors, at the offices of the Society, Marine, fire, and life assurances granted on the most liberal terms.  
Immediate and deferred annuities granted on terms especially advantageous for investment of capital.  
By order, AUG. COLLIERIDGE, Managing Director.

**SPECIMENS OF THE RATES OF PREMIUM FOR ASSURANCE OF £100.**

Age.	With Profit.	Age.	Without Profit.
20	£1 19 3	20	£1 14 6
30	2 11 3	30	2 5 1
40	3 8 3	40	3 0 2

The whole of the Profits from the Life Department divided amongst the Policy holders. All Life Policies indisputable.—All Life Policies free of stamp duty.  
ALFRED BURT, Actuary.  
\* WANTED, AGENTS and MEDICAL REFEREES for the PRINCIPAL TOWNS in the KINGDOM.  
COUNTY SURVEYORS ALSO REQUIRED.

**ASSAYING and ANALYSIS.—ASSAYS and ANALYSES**  
of MINERALS, METALS, SOILS, FURNACE, and all other MANUFACTURING PRODUCTS. INVENTORS and INTENDING PATENTEES assisted in PERFECTING any INVENTION involving an intimate knowledge of chemistry.  
INSTRUCTION in all branches of ASSAYING, ANALYSIS, and METALLURGICAL and MANUFACTURING CHEMISTRY.  
Communications to be addressed to Mr. Mitchell, 23, Hawley-road, Kentish Town.

**BOTTLE HILL TIN AND COPPER MINE.**  
To be divided into 1024 shares, at £4 per share.—Deposit £1.  
SECRETARY PRO TEM.—Mr. G. Trickett, Post-office Chambers, Plymouth.  
BANKERS—Devon and Cornwall Banking Company, Plymouth and Tavistock.

**PROSPECTUS.**  
BOTTLE HILL TIN AND COPPER MINE is situated in the parish of PLYMPTON ST. MARY, in the county of DEVON, about 7 miles from Plymouth, and 2 miles from the Plympton Station of the South Devon Railway.

The soil is very extensive, being about 1 mile in length on the course of the lodes east and west, of which there are six in number, and about half a mile from north to south. The north part of this soil is composed of granite, of a character congenial for mineral production, with the containing-house, kyles, or clay-slate stratum, with a great cross-course and several small ones, running north and south.  
A deep adit has been brought up to drain the mine, at a cost to the late adventurers of £19,000; an engine-shaft sunk 110 fathoms from surface, giving 60 fathoms of backs above the deep adit level. A great portion of this ground could be taken away at a tribute of 10s. to 12s. in the £1, within one month from the commencement of operations, which would very considerably assist the cost of the mine. In order that the workings should be fairly and regularly presented, it is necessary that a steam engine should be erected, which will prevent any delays at any season—it having been ascertained that in very dry summers and severe winters, operations have been suspended nearly three months in the year, but it is considered that the engine would not be required more than two months, on an average, during the year. The expense of this steam-power having been taken into consideration by the lord, he liberally reduced the dues to 1-20th.

It will be seen from the following reports, that this mine was abandoned by the late adventurers at the very time when good returns of tin were being made, but the water-wheel having broken down, and the machinery generally not being in a fit state to work the mine, and the tin market being at that time very depressed, many of the shareholders declined to expend money in the erection of any new.  
Tin and copper ores were sold during the last workings of the mine to an amount exceeding £100,000, which is sufficient to prove the character of the sett.  
There is now left in the bottom of the 50 fathom level a large quantity of tin-stuff already broken, with tramroad, waggon, miners' tools, and the bottom of a 14-inch plunger, which with the containing-house, agency's house, and a smith's shop, and burning-house at surface, cannot be taken at a less value than £1000. The mine will be worked strictly on the Cost-plus Principle. A deposit of £1 per share will be required to be paid to the Devon and Cornwall Banking Company's banks, as soon as the shares are subscribed for—remainder, if required, by instalments of £1 every two months.—Twenty-four shares are reserved.

Application for shares to be made to Mr. G. Trickett, Post-office Chambers, Plymouth; Mr. John Metherell, sharebroker, Tavistock; Mr. Thos. Dunn, Mathew-street, Tavistock; Mr. John Hamlyn, mining agent, Drake's Walls, Calstock, Cornwall; Mr. John Williams, Roseland Foundry, Liskeard—and of whom all further information can be obtained.—Prospectuses may also be had at the Mining Journal office, 26, Fleet-street, London.

**Report of Capt. WILLIAMS, an Agent in the former workings of the Bottle Hill Mine.**  
SIR.—According to your request, I beg to send you my report of Bottle Hill Mine, and I hope you will pardon me, if, in doing so, I am doing what I should have done more speculatively, as it seems to me that I cannot do justice to the concern by merely giving a report of present state, without advertent, in some measure, to what transpired under my notice in the last workings of the mine; and taking that as a rule, as to the probable results in case of her resumption by another company.

It seems probable to me, that whoever resumes the mine, one of their objects would be to sink deeper; and assuming this, it follows, as a matter of course, that the deeper, the better, with the containing-house, agency's house, and a smith's shop, and burning-house at surface, cannot be taken at a less value than £1000. The mine will be worked strictly on the Cost-plus Principle. A deposit of £1 per share will be required to be paid to the Devon and Cornwall Banking Company's banks, as soon as the shares are subscribed for—remainder, if required, by instalments of £1 every two months.—Twenty-four shares are reserved.

The next point to which I would draw attention is the south lode (so called), which is the next lode south from the last described. On this lode a quantity of copper and tin has been raised; and while it was productive it was wrought on, which was on the shallow levels, but very little farther; and in the levels deeper than 10 fathoms under the adit, it has never been seen.  
There are three other lodes, south of the last named, but on which nothing has been done within the present age; but there are traditions of their having been found productive on the backs by the ancients. There are also two or three lodes to the north of the one first reported on; from one of which, in the best workings, about 40 fathoms under the surface, some good tin-stuff was produced. It is a very promising lode, and in good ground, but the work done on it has been very limited.  
In conclusion, I might be permitted to say, that I am of opinion that any company with sufficient capital, combined with good management, could, in due time, and at a good and profitable undertaking, as in taking a geological view of the mine and its neighbourhood, the observer is at once struck with its very peculiar mining features; and, as a proof of its productive nature, it is only sufficient to know the amount of tin and copper produced—principally from one lode—amounting to more than £100,000 worth, by modern miners, without referring to the ancients, who mined extensively here. The mine is in a lode, of a very congenial nature, and within one-quarter of a mile of granite on the east, into which the lodes are running. I am your obedient servant,  
RICHARD WILLIAMS.

An agent in the former workings of Bottle Hill Mine.  
Plympton, Devon, Dec. 6, 1849.

**Report of JAMES EDDY, now working in the Devon Great Consols.**  
SIR.—I worked in Bottle Hill Mine 13 years, and was there up to the stopping of the mine; and up to that time we continued to raise about 5 tons of tin per month. The greatest part of this tin was raised from Fize's shaft. At that time worked as a miner on the 50 fathom level on the tramroad, and to the best of my knowledge, we have £3 per fathom for stopping. This is a good thing. The lode in the bottom of the 50 fathom level I consider to be worth £40 per fathom. At the time the mine was stopped neither the captain nor the men knew the value of the lode, until the lode went under the stamps, and we were all surprised when it was returned; but at the time the materials were all drawn from the bottom of the mine. The mine was, therefore, stopped in the face of a good course of tin. There is a quantity of tin-stuff now lying underground, broken by myself and partners, which is worth at least £200, besides tramroad, tram-wagon, bottom of a 14-inch plunger-lift, miners' tools, &c., worth more than £400. I believe Bottle Hill to be one of the best tin and copper mines in the west of England, if put to work and properly managed.  
I am, Sir, your obedient servant,  
JAMES EDDY.

**Report of WILLIAM BARRETT, Miner, Bottle Hill.**  
SIR.—I worked as a miner at Bottle Hill Mine 20 years, and was there when the mine was stopped. At the time we knocked off working we were raising good quantities of tin, most of which was taken from Fize's shaft. I was one of the last party that worked in the bottom of the 50 fathom level, where there is a good tin lode, worth more than £30 per fathom, but if tin was selling at £50 per ton, I should think the lode would be worth nearly £20 per fathom. The back of the 50 was a good tin lode, but not so rich as the bottom. There is a large quantity of tin-stuff in the bottom of the mine which was never brought to surface, on account of the machinery breaking down, which was never again put in order, and the mine was stopped with the same. There is also in the bottom of the mine a tram-wagon, tramroad, and the bottom of a large plunger, besides a quantity of miners' tools.

**Reports of CHARLES BLANCHARD, who worked in Bottle Hill Mine for Thirty-five years, and JOHN FARLEY.**  
SIR.—We herewith beg to hand you a report of Bottle Hill Mine, having worked in her for many years—in fact, from the commencement of her last working by Mr. Hitchens, until she was stopped by Captain Williams.  
There are in Bottle Hill Mine three parallel lodes—namely, a south lode, a middle lode, and a north lode. On the south lode there has been but little done in the deep adit, which is 60 fathoms deep. From this lode there has been a great quantity of both tin and copper returned, of good quality; some of the copper ore has made £17 per ton. There is a very kindly lode in the adit end now.  
The middle lode has been worked 50 fathoms under the deep adit. There is a sink in the bottom of this level, about 4 feet deep, and the lode in this level is from 10 to 19 fathoms long—worth from £35 to £40 per fathom. There is also standing a piece of lode from 60 to 70 fathoms long, and from 10 to 12 in height, above the 50, and many pieces of lode in the bottom of the 50 fathom level, which is a very good tin lode, and at the present price of tin.  
There is a railroad in the 50 fathom level, upwards of a 100 fathoms in length—a good pile of tin-stuff broken, a tram-wagon, miners' tools, and a great part of a plunger-lift, worth at least £200, which could not be taken away, in consequence of the machinery breaking down and the water coming in.  
On the north lode very little has been done. This lode was cut in sinking Strode's engine-shaft, at nearly 40 fathoms deep. There have been some very good stones of tin broke on this lode, and it is worthy of a further trial—but little having been done, little can be said about it.  
During the last workings there was nearly £100,000 worth of tin and copper returned in this mine. Should you, or any other person, desire further information, we are willing to afford all we know about it.  
We are, Sir, yours, &c.,  
CHARLES BLANCHARD, JOHN FARLEY, Sen.  
Hemerdon, Plympton St. Mary, Devon, Jan. 1, 1880.

London: Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors), at their offices, No. 26, FLEET-STREET, where all communications are requested to be addressed.  
[March 9, 1880.]